THE WEEK

NOVEMBER 20, 2011

health

DEALING WITH DIABETES

India has 62.4 million diabetics and 77.2 million prediabetics. The average age of onset is going down. Lifestyle changes and new management options—from nano-size glucometers to intestinal lining—offer hope

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INSIDE

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Cover design ..... Ajay Pingle
Photos ..... Getty Images
Picture research ..... Bimal Nath C.
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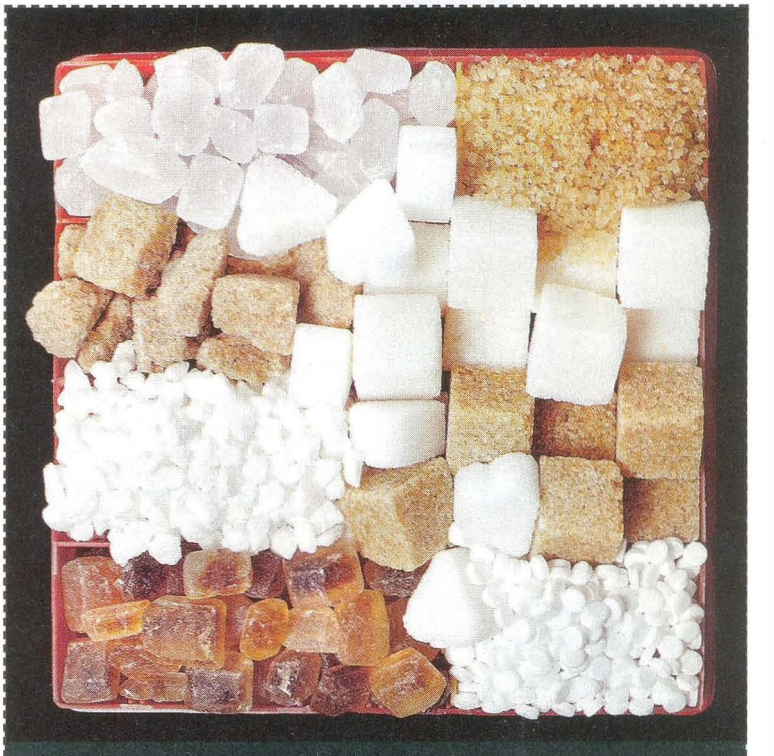
The Week Supplement: Published By Jacob Mathew from Kochi for the Malayala Manorama Co. Ltd., and printed by him at the Malayala Manorama Press, Kottayam. Managing Editor: Philip Mathew



COVER STORY

DIABETES DILEMMA

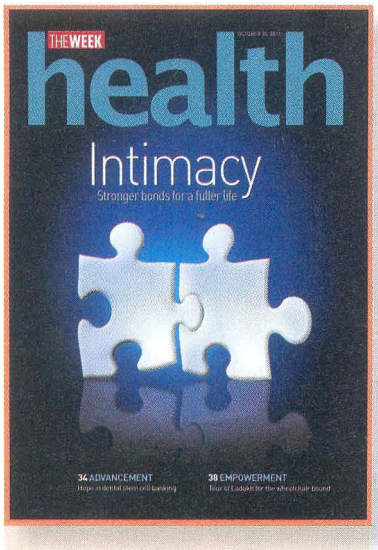
Worldwide spending by governments on diabetes-related health care for the last year was $465 billion. 366 million people in the world are diabetics, and India leads the pack with 62.4 million. Children as young as 11 are being diagnosed with diabetes. Complications are also manifesting earlier. But new molecules, insulin variants, surgical options and even non-invasive continuous glucose monitors and new needles and posh footwear make management easier than ever before

Plus

Doctors on challenges, prevention tips and pen needles

Desserts for diabetics

LETTERS



UNDERSTANDING INTIMACY

The cover story ('Comfort zone', October 30) was inspiring, especially because it highlighted not just the positive aspects but also the issues that married couples face. The case studies added value to the story. Neecia Majolly's approach towards her marriage could be an inspiration for young couples, who are finding it tough to sustain a relationship along with the other pressures in life. Intimacy is not merely a physical, social and emotional reality and the story amply highlights this fact.

REV. DR A. SANTIAGO,
Sivagangai, Tamil Nadu.

The cover story made me recall the happy days that I had spent with my four kids (adults now) and the love that they shared. For them, nothing was 'yours' or mine'. They shared everything equally among themselves be it candies or anything else. Today, when they sit together and tell their kids these stories, I feel very proud.

PADMA,
New Delhi.

The line, "A deep emotional bond with a person can be therapeutic", in your story has proved to be true for me many a times. The person with whom I share an intimate relationship is my best friend of five years. She has brought out the hidden creativity in me which I was never aware of. Talking to her for a few minutes makes me feel rejuvenated. Though she lives in America now, the physical distance has not weakened our bond.

MALLIKA,
Mysore, Karnataka.

The cover story was thought-provoking. Deep ties with parents, friends, spouse and colleagues are emotionally fulfilling. But the present generation is more interested in earning money and leading a good life rather than building strong ties. They should learn to prioritise their relationships because a secure and stable relationship would ensure a happy life even if it lacks certain materialistic comforts.

JANAKI MAHADEVAN,
Chennai.

Balance is everything

The cover story on osteoporosis ('Make no bones...', October 9) covered every aspect related to the condition. It is triggered by lack of oestrogen in women and androgen in men. And this is due to the deficiency of vitamin D. The easiest way to get a healthy dose of vitamin D is by drinking milk regularly. Also, leading a disciplined and well-balanced life would be enough to avoid osteoporosis.

K. NEHRU PATNAIK,
On email.

Unnecessary evil

I was surprised to see the article on nutraceuticals ('The zing thing', September 11). To keep fit and remain healthy, one should eat a balanced diet, do 30 minutes of cardio exercises at least five days a week, and get about seven hours of sleep. Nutritional supplements are completely unnecessary, and ridiculously expensive. I think the magazine should not give these products unwarranted publicity.

DR (LT.-COL.) GOPAL AGARWAL,
Dehradun, Uttar Pradesh.

Helpful guide

The September 11 issue was packed with information and helpful, especially the 'Yoga Made Easy' section. The magazine should do a story on preventive measures to be taken during the changing weather by senior citizens and also a story on medical insurance.

R.C. BHARGAVA,
Jaipur.

What an idea!

It is a known fact that listening to music is a good way to relax and manage stress. It is heartening to know that music therapy is being used to help patients battling life-threatening ailments like cancer (Quickscan, September 11). It is an innovative form of treatment and would definitely prove useful.

ARATHI RAGHUVEER,
Mysore, Karnataka.

SIMPLE STEPS

Be in control

◆ Make exercise a part of your daily life. It will revitalise your body.

◆ Start eating healthy from today. Avoid junk food and eat small meals at equal intervals. Eat fruits and fibrous food regularly.

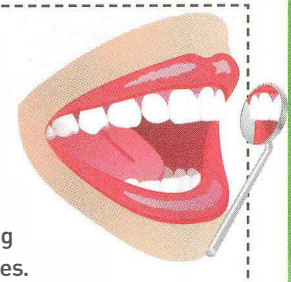
◆ Sleep for six to eight hours every night. Avoid watching TV before hitting the bed. Instead, read a book for a good night's sleep.

◆ Quit smoking, chewing pan and tobacco, and avoid drinking.

◆ Do yoga or listen to music to destress.

◆ Say no to substance abuse.

◆ Take care of your teeth, especially people who are suffering from diabetes.



◆ Go for regular health check-ups.

◆ Be environmentally conscious. Breathe in fresh air and try to go for a morning walk regularly. Avoid polluted areas. Plant a tree.

◆ Practise safe sex.

C.K. SUBRAMANIAM,
Navi Mumbai, Maharashtra.

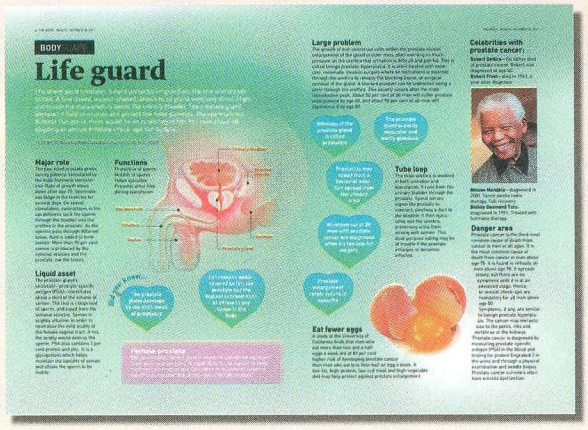
Got some simple steps to share? Send your views to editor@the-week.com

PRIZE-WINNING LETTER

Spiritual wellness

Bodyscape is highly informative as it provides an insight into how each organ in our body functions, its importance and what we should do to take care of it. In this day and age when people do not have the time to take care of their body, it is important that one does some basic things to remain healthy. Apart from physical well-being, it is important to take care of one's spiritual health as well. This can be done through prayer and meditation. Keeping a positive frame of mind is equally important.

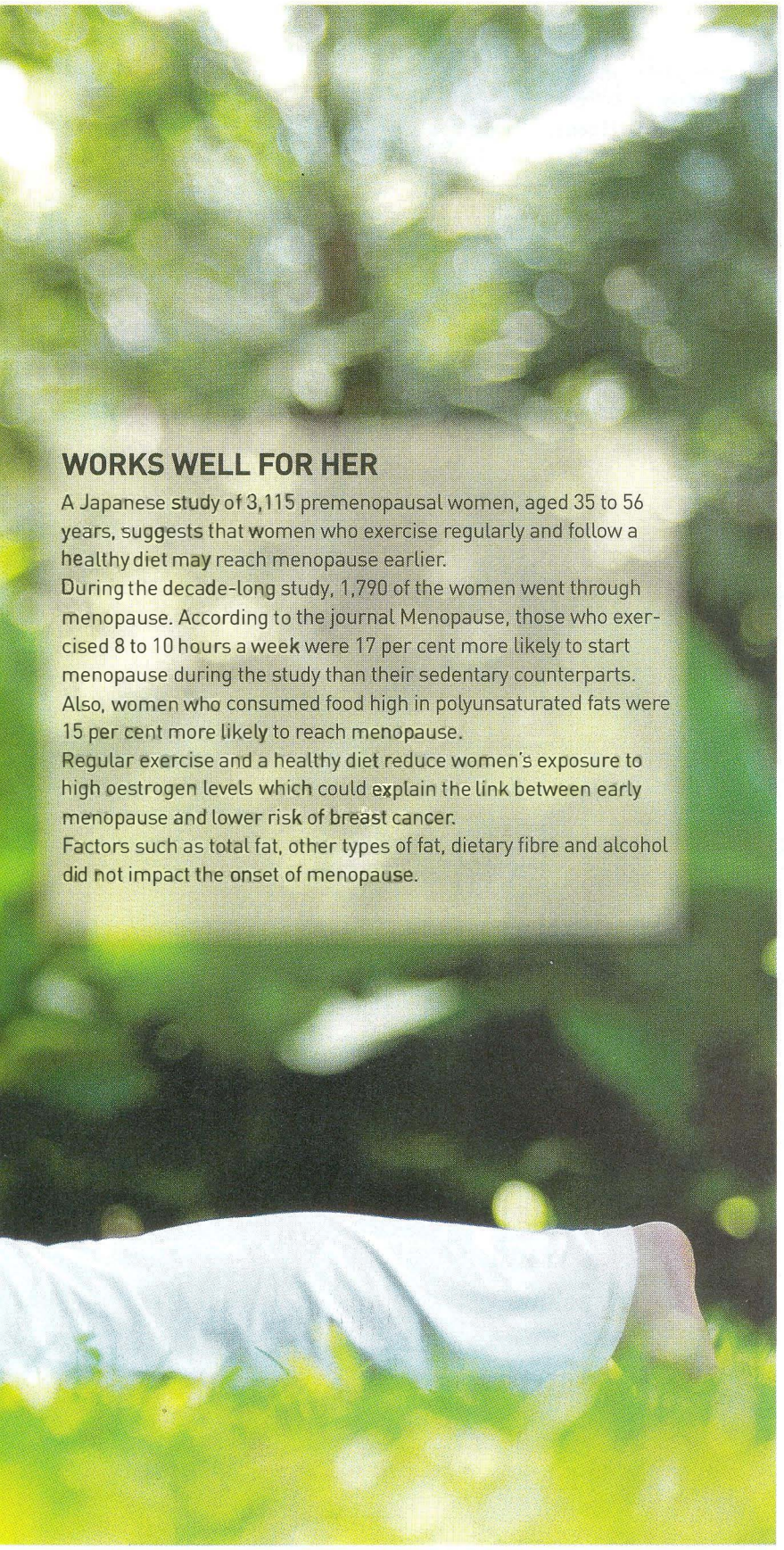
K.R. SRINIVASAN,
Secunderabad,
Andhra Pradesh.



WRITE TO US!

Have you been touched by an article in HEALTH? Do you have a story or experience to share? What more would you like to see on the pages? Please write to us. The best letter of each issue wins THE WEEK leather backpack. You can mail us at editor@the-week.com or post your letter to The Week, Manorama Buildings, P.B. No. 4278, Kochi - 682036, Kerala, India.

Please enclose your full postal address and telephone number.



WORKS WELL FOR HER

A Japanese study of 3,115 premenopausal women, aged 35 to 56 years, suggests that women who exercise regularly and follow a healthy diet may reach menopause earlier.

During the decade-long study, 1,790 of the women went through menopause. According to the journal Menopause, those who exercised 8 to 10 hours a week were 17 per cent more likely to start menopause during the study than their sedentary counterparts.

Also, women who consumed food high in polyunsaturated fats were 15 per cent more likely to reach menopause.

Regular exercise and a healthy diet reduce women's exposure to high oestrogen levels which could explain the link between early menopause and lower risk of breast cancer.

Factors such as total fat, other types of fat, dietary fibre and alcohol did not impact the onset of menopause.

SHOES TRACK

Walking shoes with a GPS device fitted in the heels that will help locate dementia patients who wander off will soon be available in US stores. Manufactured by GTX Corp, the shoes cost around $300 a pair. Families can set up a monitoring service to locate wandering Alzheimer's patients. The number of Alzheimer's patients is growing in epic proportions. According to project adviser Andrew Carle of George Mason University's College of Health and Human Services, nearly 60 per cent of dementia sufferers will wander and become and up to half of those lost who are not found within 24 hours may die from dehydration, exposure or injury.

DID YOU KNOW?

Teens who drink more than five cans of non-diet, fizzy soft drinks a week are about 9 to 15 per cent more likely to carry a weapon and engage in aggressive and violent acts compared with kids who drink less: Injury Prevention

HEART TRICK

Can you alter the genes that predispose you to certain diseases? A Canadian study in PLoS Medicine suggests that eating lots of fruits and raw vegetables can weaken the effect of the 9p21gene, the strongest marker for heart disease.

The study analysed the effect of diet on the 9p21 gene in 27,243 people belonging to five ethnicities—European, South Asian, Chinese, Latin American and Arab. Having a copy of the 9p21 gene can increase the risk of heart disease by 20 per cent. The study found that people with the variants who consumed a diet rich in fruits, berries and raw vegetables showed no increased heart risk.

"It means that perhaps our family history, or genetic risk, is modifiable," notes Sonia Anand, lead researcher.

DID YOU KNOW?

Ginger can reduce the risk of colon cancer by decreasing inflammation in the large intestine: Cancer Prevention Research

WORD'S WORTH

RUBEOLA AND RUBELLA

Rubeola or nine-day measles is a contagious viral infection. Symptoms include rash, fever, runny nose, cough and red eyes, and may last for about a week. Secondary infections such as pneumonia or encephalitis, if occurring, may be serious. A single attack of measles can make a person immune for life. Also, if a woman has had measles or been vaccinated, she will pass on the antibodies to her child, and for about one year, the baby may be immune.

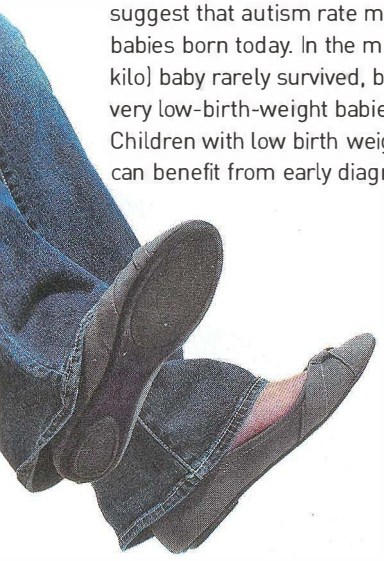
Rubella is also known as German measles or nine-day measles. It is a viral infection that has mild symptoms, such as joint pain and rash. Rubella is less contagious than rubeola. The rash lasts for up to four days. For women in the early stages of pregnancy, exposure to the rubella virus may have serious consequences, including birth defects for the baby. MMR combination vaccine (mumps, measles and rubella) is prescribed for all children.

WEIGHT WORRIES

Preemies have a five times greater risk of developing autism spectrum disorders than kids born at normal weight, says a study published in Pediatrics.

The researchers found that 5 per cent of the 623 low-birth-weight (less than 2kg) children followed for nearly two decades developed autism, compared with 1 per cent of the general population. The study authors suggest that autism rate may be even higher among low-birth-weight babies born today. In the mid-1980s, a 1-pound (a little less than half a kilo) baby rarely survived, but with advances in neonatal technology even very low-birth-weight babies are able to survive.

Children with low birth weight should be screened early for autism so they can benefit from early diagnosis.



FOR STRONGER NETWORKS

A British study in the journal Proceedings of the Royal Society B: Biological Sciences concludes that the number of Facebook friends a person has corresponds with particular brain regions. More virtual friends also meant more real-world friends.

The researchers studied brain scans of 125 university students who were active Facebook users. Having a large network of online friends was linked to having denser grey matter in the right superior temporal sulcus, left middle temporal gyrus and entorhinal cortex regions of the brain associated with emotion, memory, navigation and perceiving social cues.

The researchers, however, do not have an answer to the question as to which came first—are people with more grey matter hardwired to make more friends, or does social networking actually change our brains?

The study refutes popular assumption that social networking creates recluses. Instead it shows "that most Facebook users use the site to support their existing social relationships, maintaining or reinforcing these friendships, rather than just creating networks of entirely new, virtual friends".

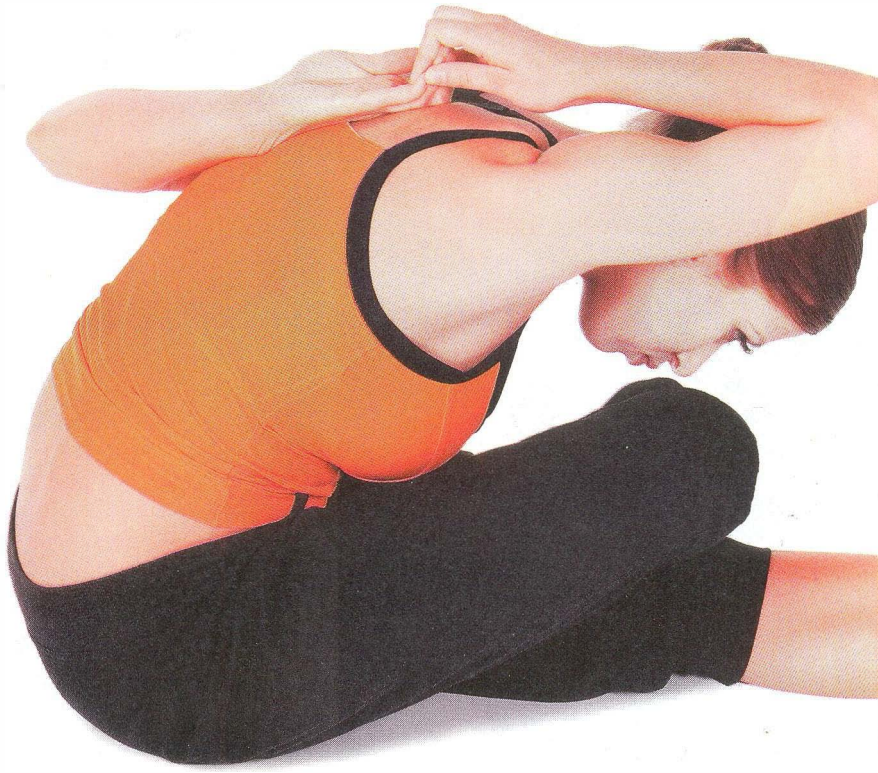
DID YOU KNOW?

Couples who say wealth is not so important score 10 to 15 per cent better on marriage stability and other measures of relationship quality than couples for whom money and possessions are extremely important: Journal of Couple & Relationship Therapy

WATCH THIS SPACE

Polio may be a thing of the past in India with only one case reported in the past nine months making it the longest ever polio-free period since eradication campaign was launched nearly two decades ago. India, along with Afghanistan, Pakistan and Nigeria are the only four countries where polio is still considered endemic. The only polio case for the year was reported in West Bengal in January 2011. No cases have been reported in the usually high-incidence states of Uttar Pradesh and Bihar.

As per the World Health Organisation, a country is declared polio free when no cases of the disease are reported for three years. To prevent setback in its fight against polio, India has stepped up immunisation campaigns in states bordering Pakistan and Nepal.



A BETTER TIME

A Spanish study in the Journal of the American Society of Nephrology has found that taking blood pressure medications at bedtime is more effective in controlling hypertension and it also considerably reduces the risk of heart attacks and strokes.

Half of 661 patients with chronic kidney disease and hypertension took their prescribed blood pressure medications at bedtime and half took their medications first thing in the morning. After a median follow-up of 5.4 years, the study found that patients who took at least one blood pressure-lowering drug at bedtime had better control of their blood pressure, and their risk for cardiovascular events such as heart attack, heart failure or stroke was about one-third that of patients who took all medications in the morning.

Those who took the medications at night also had a significantly lower average sleep-time blood pressure and more of them showed better control of ambulatory blood pressure.

BACK UP WITH YOGA

Yoga and stretching exercises are equally effective in relieving chronic back pain, according to a US study in the Archives of Internal Medicine. The researchers randomly assigned 228 adults with chronic lower back pain to 12 weekly classes of yoga or conventional stretching exercises or a self-care book. At 12 weeks, those in the yoga and stretching group reported significant improvement in symptoms, better function and less difficulty in carrying out daily activities. They were also twice as likely to have cut back on pain medication as the self-care group. The benefits remained even 26 weeks into the study.

The study concludes that yoga's benefits can be attributed to its physical aspects of stretching and strengthening the muscles rather than its mental components.

DID YOU KNOW?

The bacterium that caused the Black Plague that wiped out more than a third of Europe's population in the 14th century is the ancestor of all modern plagues, as it is similar to the modern strains of the plague-causing bug: Nature

SUPPLEMENT WITH CARE

A study in the Archives of Internal Medicine that followed 38,772 older women for nearly two decades found an increased risk of death among those who took multivitamins, vitamin B6, folic acid, magnesium, zinc, copper or iron compared to non-users. Calcium was the only supplement that was not associated with an increased risk. Iron had the highest risk.

Over the study period, the use of supplements increased from 63 per cent in 1986 to 85 per cent by 2004. The increased death rate remained in spite of the fact that women who took supplements tended to be healthier with lower rates of diabetes and high blood pressure, and lower body mass index.

While the study does not explain the reason for the risk of death, it concludes that there is no established benefit of taking vitamins to prevent major chronic diseases.

CHANGE THEY WILL

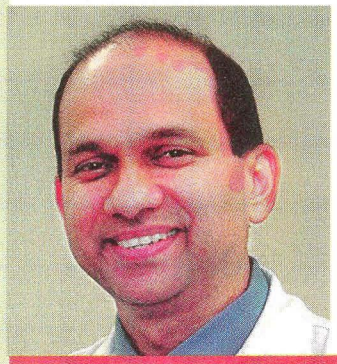
Intellectual capacity of adolescents as measured by IQ can chan time, gaining or dropping as much as 20 points within a few years, says a study in the journal Nature.

For the study, British researchers gave IQ tests to 33 children between the ages 12 and 16. They retested the children four years later and took the MRI scans of their brains and found that both verbal and non verbal IQ of about one-fifth of the kids changed dramatically, moving them from above average to below average or vice-versa. While some students' IQ rose as high as 21 points, others fell by up to 18 points.

The IQ changes corresponded with structural changes in specific brain areas, found the study, which shows that intelligence is not fixed and it varies in the teenage years.

It would be "encouraging to those whose intellectual potential may improve, and would be a warning that early achievers may not maintain their potential".

Q&a



DR JAME ABRAHAM, MD, FACP, is Bonnie Wells Wilson Distinguished Professor, chief of oncology and medical director of Mary Babb Randolph Cancer Center, West Virginia University, USA. jameabraham@hotmail.com

ASK EXPERT: ONCOLOGY

Rajeev Sood: **In the age of internet when everybody is using Google for almost everything, what is your opinion about going for a PET scan for cancer diagnosis? Is PET scan capable of detecting all types of cancer cells in the human body? I have been smoking for the last 20 years and suspect I have squamous cell carcinoma in my oral cavity.**

Excellent question. PET (positron emission tomography) scan is not a screening tool for cancer. Like any other test, it has its own limitation. Usually it is done after injecting radiolabelled glucose into the vein. The radiolabelled glucose will go to the areas of increased metabolic activity, since the cells which are dividing require plenty of nutrition (such as glucose). Then with the PET camera we can take a picture of the areas of accumulation of glucose which glow in the background (since it is radiolabelled). The glucose can go to areas of inflammation, infection, trauma or cancer. So everything which is glowing in the PET scan is not cancer. Moreover, it is impossible for a society to accept this as a screening tool (due to the cost). For you the next best step is to stop smoking.

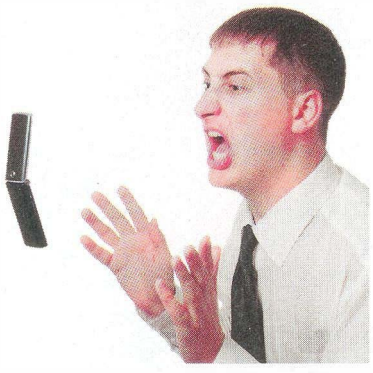
Sheetal Shrigiri: **My father was diagnosed with pancreatic cancer three months ago. It was non-resectable, metastatic adenocarcinoma with nodes seen in liver bed and omentum. Ca 19-9 (cancer antigen test usually done to differentiate pancreatic cancer from other conditions or to monitor it was >50,000. He has received five doses of gemcitabine and is also taking erlotinib 100mg daily. Now the result of a repeat test is again >50,000. Is it advisable to continue chemotherapy? He has severe fatigue, lack of appetite, altered sensation of taste and smell. What is the prognosis and life expectancy? Is there any other regimen with more optimistic results?**

Metastatic pancreatic cancer (pancreatic cancer spread to the other parts of the body) is one of the most difficult cancers to treat. Most of the available treatments will give only symptomatic control without any meaningful prolongation of life. So I will strongly recommend that you talk to your oncologist about the pros and cons of further treatment versus palliative treatment. It is very important to make sure that he has a good pain management plan.

SAVE THIS MESSAGE

One in six cell phones may be contaminated with faecal matter, say researchers from the London School of Hygiene & Tropical Medicine and Queen Mary, University of London. The most likely reason—people don't wash their hands after using the toilet.

For the study, the researchers took swab samples from 390 mobile phones and 390 hands in 12 cities in the UK. Although 95 per cent of the people interviewed claimed to wash their hands with soap, 92 per cent of phones and 82 per cent of hands had some type of bacterial contamination. Sixteen per cent of hands and an equal per cent of phones had harmful E. coli bacteria of faecal origin that is associated with stomach upsets and serious cases of food poisoning.



The study was done ahead of Global Handwashing Day on October 15, a global initiative that aims to make washing hands with soap into an automatic behaviour, deeply set in people's daily routine.

Faecal bacteria can be transferred by touch to door handles, food and even mobile phones, from where the germs can be picked up by other people.

Contributor:
SHYLA JOVITHA ABRAHAM

YOUNG BLOOD: Vishal Sinha was just 30 when he was diagnosed with diabetes

ARVIND JAIN

Bitter sweet

Diabetes: New management options, from nano-sized glucometers to intestinal lining, offer hope to India's 62.4 million diabetics and 77.2 million prediabetics

BY RENU VAIDYANATHAN

Krishna Murthy's woes began with a birthday present. The 64-year-old Bangalorean was delighted when his daughter gifted him a nice pair of shoes. But they were tight and his toes felt cramped. Thinking they would stretch to a comfortable fit, he wore them for two days.

A week later, the former restaurateur developed severe fever. There was a red spot on his toe. His doctor gave him medicines to reduce the fever. Some days later, Murthy, who has been diabetic from age 41, noticed pus on his right foot. And then, a part of his toenail peeled off. When the wound worsened, alarm bells rang. "By then, the toe had nothing left but bone and nail and I had no choice but to get it amputated," he says.

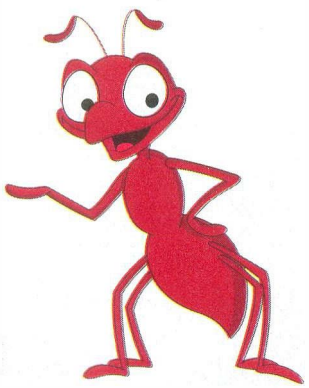
Murthy has realised the importance of keeping blood sugar levels under control. He now says 'no' to his favourite sweets. "I avoided rice when the toe wound healed," he says. "I always wear shoes while going out. I oil my feet and walk indoors with the shoes, to avoid shoe bite."

It took the loss of a toe to instil caution into Murthy. But what about the 366 million diabetics around the world today? "We expect the figures to shoot to 438 million by 2030," says Leonor Guariguata, biostatistician, International Diabetes Federation. "That is 6.6 per cent of the world's adult population. And at least half the number of diabetics in the world remain undiagnosed! We underestimate the figures, but no one believes us anyway. Each year, 4.6 million people die of diabetes-related complications." At the 47th annual meeting of the European Association for the Study of Diabetes (EASD) in Lisbon recently, the IDF revealed that the worldwide spending by governments on diabetes-related health care for the last year was $465 billion.

There is no doubt that the world is grappling with a type 2 diabetes epidemic. "My patients used to be 50 per cent type 1 diabetics and 50 per cent type 2," says Prof. Stephen Atkin, head of diabetes and endocrinology, postgraduate medical institute, University of Hull, UK. "Now, 80 per cent of them are type 2 diabetics. In August, I had a 14-year-old patient with type 2 diabetes."

The story in India is alarming. A survey conducted by the Indian Council of Medical Research and India Diabetes (ICMR-INDIAB) reveals that there are 62.4 million diabetics in the country and 77.2 million prediabetics (the stage before full-blown diabetes). The IDF reveals that India is number one, followed by China, and that the lowest figures are in sub-Saharan Africa.

"I call the sudden increase in the number of diabetics in the 1990s the 'Murdoch phenomenon'," says Dr Nihal Thomas, professor and head, department of endocrinol-



Did you know...

World Diabetes Day, November 14, is the birthday of Sir Frederick Banting (1891-1941), who discovered insulin

Increase in intake of calories has led to excess energy intake. It is like running Windows 7 on Pentium I computers and expecting smooth performance.

Dr S.K. Wangnoo
Senior consultant, Apollo Centre for Obesity, Diabetes and Endocrinology, Delhi

ogy, diabetes and metabolism at Christian Medical College, Vellore. "Starting from the 1980s, a 0.4 per cent increase in diabetics in the rural areas and 2 per cent increase in urban areas was seen." The proliferation of diabetes, he says, is similar to Rupert Murdoch's "invasion" of journalism and television.

What makes Indians so vulnerable to diabetes? A combination of heredity and changing lifestyle, say experts. "Indians have the so-called 'thrifty genotype'—our genes are tuned so as to take care of metabolic requirements in periods of limited food intake," says Dr S.K. Wangnoo, senior consultant at Apollo Centre for Obesity, Diabetes and Endocrinology in Delhi. "Increase in intake of calories has led to excess energy intake, which cannot be used effectively. It is like running Windows 7 on Pentium I computers and expecting smooth performance."

Lifestyles are increasingly becoming sedentary. "We are yet to identify the specific genes which may precipitate type 2 diabetes more in Indians, as for instance in those with Dravidian ethnicity. But private vehicles, cable television, economic liberalisation, mobile

New treats

MEDICINES

GLP-1 inhibitors

Glucagon-like peptide inhibitors are a new class of molecules. They:

- Increase insulin secretion and sensitivity and beta-cell mass in the pancreas
- Decrease glucagon secretion and delay gastric emptying
- Are not at high risk of hypoglycaemia
- Help lower glucose levels and obesity

GLP-1 analogues now used to treat type 2 diabetes include:

- Liraglutide, extracted from the saliva of the gila monster. Marketed as Victoza by Novo Nordisk
- Bydureon, a weekly-injectable approved in Europe

Gliptins

This group of drugs increase GLP-1 inhibitors, which inhibits glucagon release and increases insulin secretion. Not as powerful as GLP-1s, these are used in combination with other drugs.

- Sitagliptin: in combination with metformin, is marketed by MSD as Janumet
- Saxagliptin: effected in the treatment of type 2 diabetes with kidney problems; marketed as Onglyza by Bristol-Myers Squibb
- Vildagliptin
- Linagliptin: awaiting approval in India

Insulin degludec

Ultra-long lasting insulin, currently undergoing phase III clinical trials

Insulin glargine

Most-prescribed insulin in the world; has an acting period of 16 hours

Insulin glusine

Rapid-acting insulin, for those with active lifestyles. Marketed by Sanofi as Apidra

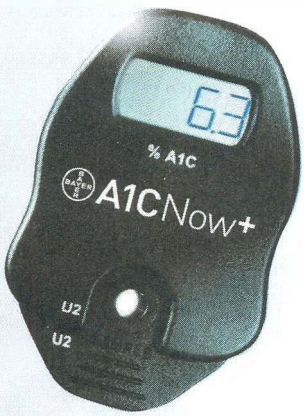
GIZMOS

OmniPod

Second-generation nano-pump
Made by Ypsomed
World's first tubing-free, smallest-sized insulin patch pump
Can hold 30gm insulin
Comes with integrated glucometer and cannula

OneTouch ZoomPro

A diabetes management software that identifies trends in glucose levels and insulin doses
Summarises statistics, including carbohydrates
Lets you print reports whenever a OneTouch glucometer is connected to the PC



A1CNow+

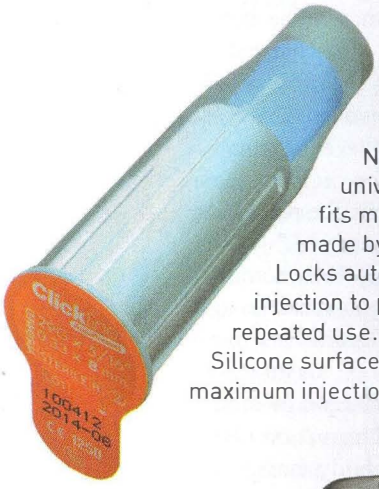
A multi-test system that measures HbA1C or haemoglobin combined with glucose
Made by BayerHealthcare
Precise results in five minutes

GRAPHICS: N.V. JOSE, RESEARCH: RENU VAIDYANATHAN

A range of medicines and gadgets is now helping diabetics lead normal lives

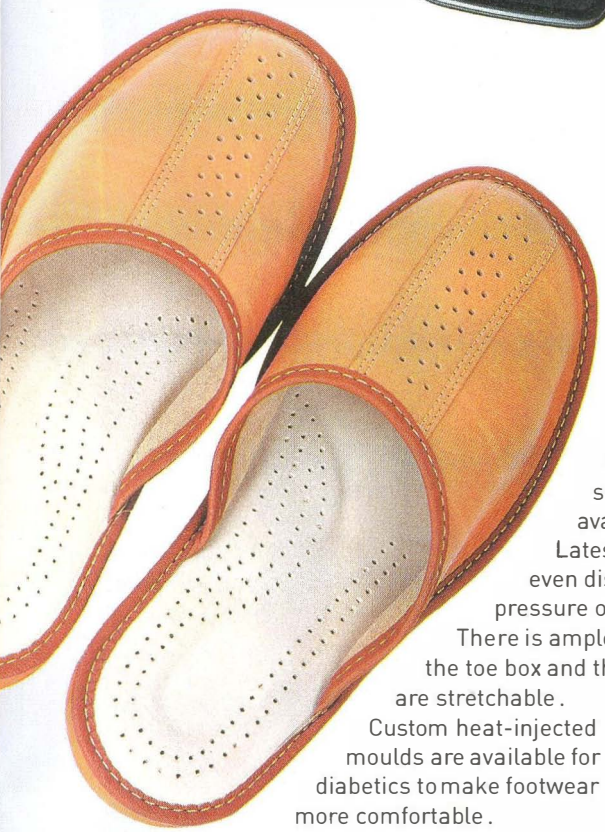
OneTouch VerioPro

No-coding glucometer for those on intensive insulin therapy, made by LifeScan (Cilag, Johnson & Johnson). New strip technology eliminates interferences such as vitamin C and haematocrit.



ClickFine

New-generation universal needle that fits most insulin pens, made by Ypsomed
Locks automatically after injection to prevent repeated use.
Silicone surface treatment for maximum injection comfort.

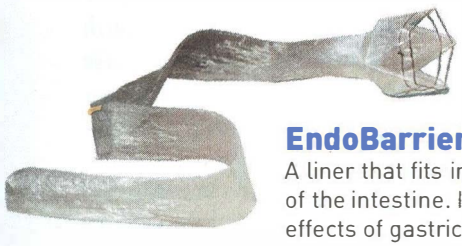


Diabetic footwear

Premium dress shoes, bathroom slippers, heels and sports shoes are now available.
Latest models provide even distribution of pressure on the foot.
There is ample space for the toe box and the shoes are stretchable.
Custom heat-injected moulds are available for diabetics to make footwear more comfortable.

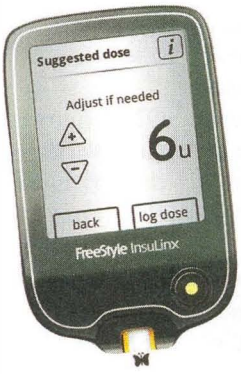
HG1-c

A non-invasive, continuous glucose monitor made by C8 Medisensors
Uses a light-sensitive sensor to measure glucose levels.
Comes in a light-weight belt device with battery.
US. It stores 120 days of data, which can be downloaded



EndoBarrier

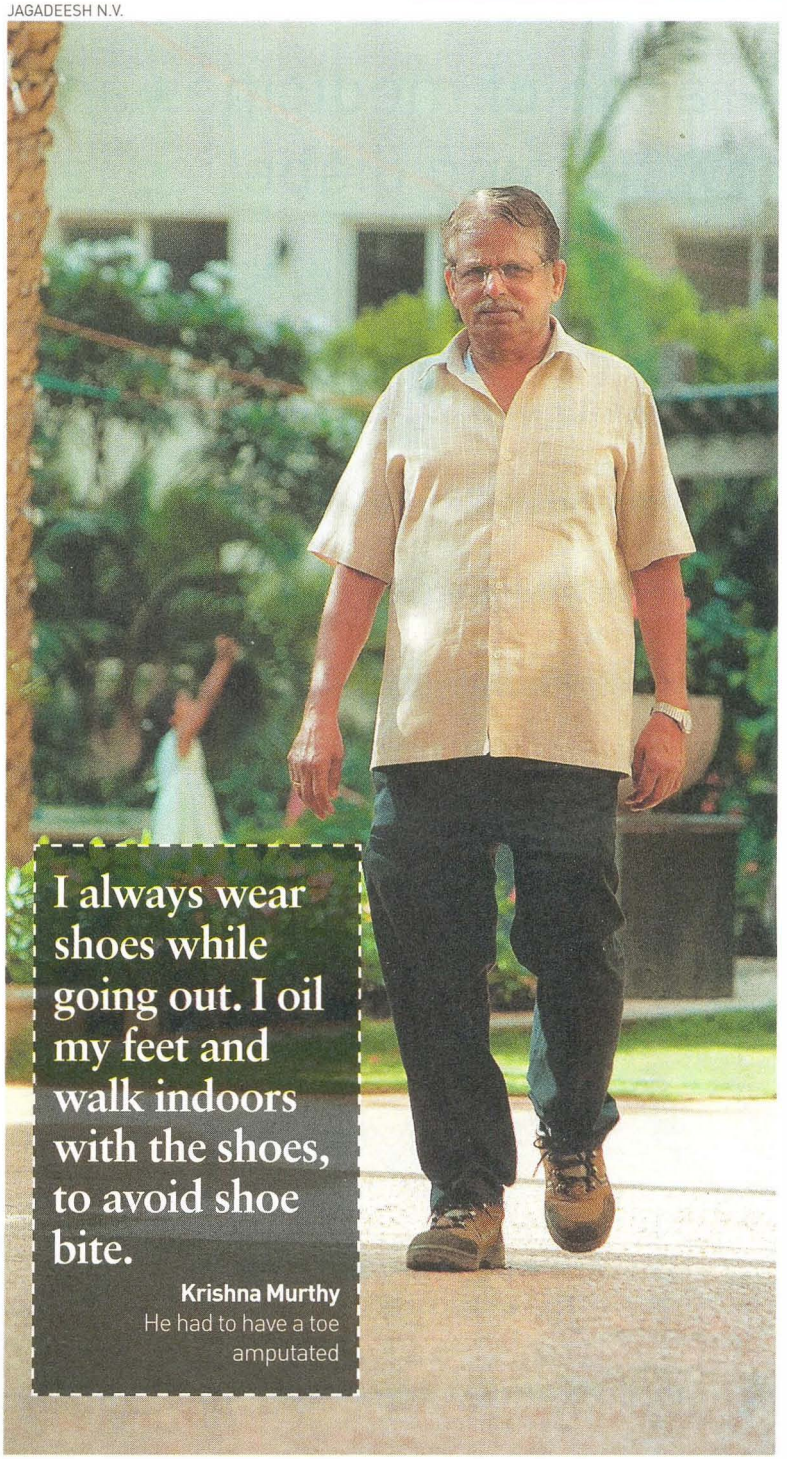
A liner that fits inside a section of the intestine. It mimics the effects of gastric bypass



FreeStyle Insulinx and FreeStyle Optium

New generation glucometers
Made by Abbott Laboratories
Personalisable, touchscreen devices that calculate insulin dosage with adjustment for errors.

JAGADEESH N.V.



phones and computers, processed and fast food and increased academic competitiveness are reducing physical activity. Most people blame the burgers and fries, but what about soft drinks? There are shops selling bottled drinks at 14,000 feet, up the Nathu La pass," says Thomas. "The definition of diabetes also changed. In 1998, the fasting cut off was lowered from 140mg/dl to 126mg/dl. Plus, increased life expectancy—from 56 for males in 1980 to 67 years now—means the prevalence of diabetes has increased."

Or, the tendency to accumulate fat may have begun centuries ago. "Indians can be classified as 'metabolically obese' or dysfunctional—they have multiple metabolic derangements but are 'non-obese' by conventional body mass index standards," says Dr Anoop Misra, chairman of the Centre of Excellence for Diabetes, Metabolic Diseases and Endocrinology at Fortis Hospital, Delhi. "They usually have high body fat, abdominal adiposity and thick truncal subcutaneous fat. These contribute to insulin resistance, dyslipidemia, and hyperglycaemia. It seems that the 'switch' for metabolic control has been slowed down several centuries ago. This 'switch' continues to work in the same mode, even when more control is needed."

Experts say Indians have more accumulated body fat, right from birth. "About 1.5 times more than the westerners," says Misra. "But when it accumulates in the abdominal region, it interferes with metabolism and causes problems."

The IDF blames the "westernisation of diets". "Urban populations show three times the figures seen in rural populations," says Guariguata. "The fact is that there is less junk food in rural areas."

Low weight at birth is now considered another risk factor. A study published in June in the PLoS ONE journal reveals that low birth weight—present in 26 per cent of Indian babies—increases adult type 2 diabetes risk. Indian babies generally have the lowest birth weight in the world (2.6kg to 2.9kg, compared to 3.5kg to 3.7kg in Europe). "This could be due to foetal undernutrition," says Misra. "Babies born with low birth weight have been shown to have adiposity by age eight."

AGE RAGE

For an 11-year-old, saying no to ice creams and chocolates can't be

easy. But Sarah has been doing so for the last six months, and she has lost 12kg and her blood sugar levels seem to be under control.

Her constant lethargy and alarming weight gain alarmed her mother Ayesha. "It didn't seem healthy," says the Bangalore-based homemaker. Once Sarah was diagnosed with diabetes, Ayesha worked out a diet chart with the help of a dietician. It mostly consists of salads—fresh veggies and fruits—along with moderate portions of rotis, baked chicken and milk. "Once in a while, I am allowed to eat Chinese," says Sarah.

The average age of onset of diabetes in India is going down. In 2008, advocate Vishal Sinha accompanied his pregnant wife to the doctor. On an impulse, he decided to undergo a routine health check. Then aged 30, he was overweight and a foodie. The check-up revealed he had type 2 diabetes.

Childhood obesity is also on the rise. A study of 1,359 adolescents and young adults in India, aged between 14 and 25, shows that children aged between 14 and 18 have a 20 per cent chance of developing prediabetes and low HDL (good cholesterol) levels. Diabetes occurs a decade earlier in India than in the west. "I think they are also being diagnosed earlier, thanks to increasing awareness and regular check-ups," says Anjana Bhan, senior consultant, endocrinology and diabetes, Max Healthcare, Delhi.

It is not easy on the parents and the young diabetic. "How can they tell their friends they cannot have sweets, or how can they join their friends for dinner and secretly take insulin shots?" asks Dr Unnikrishnan A.G., professor of endocrinology, Amrita Institute of Medical Sciences, Kochi. "How can their parents motivate them to believe that they are normal kids?"

Diabetes is the second leading cause of lower extremity amputations. A patient, who had been diabetic for eight years, used to say walking barefoot on the floor was like walking on cotton.

Dr Anjana Bhan
Senior consultant, Max Healthcare, Delhi

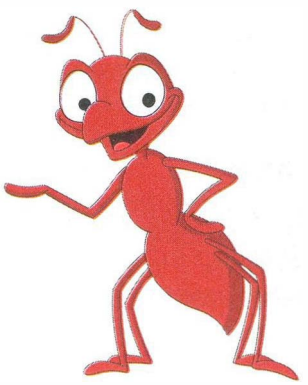
The most important concern in young diabetics is to achieve good control over the blood sugar levels immediately. "They should be monitored at least 12 times a week," says Thomas. "Children with diabetes are at risk of developing eye and renal troubles by their 20s. But they can do as well as anyone else, with control and monitoring. The first-known juvenile diabetic, diagnosed in 1922, lived up to their 70s."

Steps taken in the prediabetic stage can delay the onset of diabetes, say experts. "It has been proven that, with simple diet and exercise, diabetes can be prevented by 58 per cent in people who are at high risk," says Unnikrishnan. "Medications are the last resort."

Prediabetics (those with impaired glucose tolerance) may or may not have symptoms. But borderline blood glucose levels are seen. "Fasting sugar levels are below 100mg/dl for a normal person, and between 120 and 125mg/dl for a prediabetic," says Bhan. "Anything above 126mg/dl is full-on diabetes."

Another way of measuring is a glucose tolerance test, where patients are asked to drink a 75gm load of glucose. "After this, if blood glucose levels are below 140mg/dl, it is normal," she says. "Between 140 and 199mg/dl, it is at the prediabetic stage while levels of 200mg/dl and above are diabetic. Most patients bring their fasting blood sugar results, but we need to know the sugar level fluctuations through the day, especially after a meal. The American Diabetes Association's guidelines for this are fasting and post-meal blood glucose tests and the HbA1C test, which, if the levels are above 6.5, indicates diabetes." The HbA1C test, which must be done every three months, is a measure of haemoglobin which carries glucose.

Gestational diabetes (during pregnancy) is believed to increase the risk of developing diabetes later, both for the mother and the child. "Gestational diabetes can lead to a bigger baby, who is at risk of developing diabetes later," says Thomas. "About 30 per cent women who had gestational diabetes later develop type 2 diabetes," says Bhan.



DOUBLE WHAMMY

Long-term or uncontrolled diabetes can cause complications such as neuropathy (nerve damage), re-

Did you know...

The earliest known mention of diabetes was in 1500BC Egypt

STEMMING THE FLOW

BY MINI P. THOMAS

Stempeutics Research, a Bangalore-based company which is into developing stem cell-based products, has been focusing on developing a safe, effective and affordable product in India for type 2 diabetes, for the last one and a half decades. Recently, Stempeucel, their investigational medicinal product, received approval from the Drug Controller General of India for phase 2 clinical trials. "India is one of the countries to enter this phase of clinical trials after the US. It will be a multicentric, placebo-controlled, double blind, allogenetic trial," says B.N. Manohar, CEO, Stempeutics Research. They expect the first 'off the shelf' product to hit the market by the end of 2013.

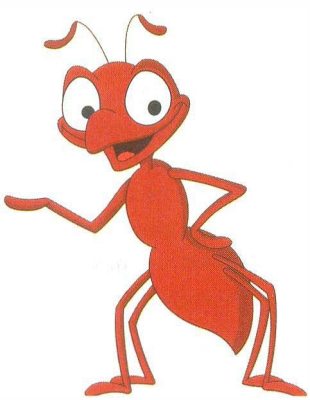
Stempeucel has been developed from mesenchymal stem cells derived from donated bone marrow. The company claims that it is the first of its kind product developed in India.

Stempeutics Research is now studying the possibility of stem cells injected into diabetics being able to trigger pancreatic resident stem cells or progenitors into forming new cells. The study also aims at evaluating the safety and efficacy of a single intravenous dose of Stempeucel in patients having type 2 diabetes and to find out the most suitable dose.

nal disease, retinopathy, cardiovascular problems and diabetic foot (ulcers, gangrene and amputation). Krishna Murthy has diabetic retinopathy (a result of the growth of new blood vessels in the eye due to inadequate blood supply). He has bleeding from the eyes. This may damage the retina. His heart and kidney are also affected. "Some months ago, I had a mild heart attack," he says. "Now I have trouble urinating. My body is withering away due to diabetes."

Unlike the retina, where laser therapy can improve matters, chronic renal disease is a far more serious outcome of long-term, uncontrolled diabetes. "It is a progressive disorder where people need renal replacement therapy either as transplant or dialysis," says Thomas. "But 90 per cent Indians cannot afford it."

The number of patients with neuropathy or amputations is also on the rise, while their average age is decreasing. "Diabetes is the leading cause of blindness," says Bhan. "It is also the second leading cause of lower extremity amputations, after accidents. A patient, who had been diabetic for just eight years, came in with a gangrenous toe, which was amputated. His ulcers were so bad, he used to say walking barefoot on the floor was like walking on cotton. He had also undergone angioplasty and was on cholesterol-lowering drugs."



Did you know...

Insulin has to be injected, because, if taken orally, it is immediately digested and destroyed

Diabetics of south Asian origin are found to have about one-thirds the risk of foot ulceration, compared to European diabetics, despite worse control. A study presented by Dr H. Fadavi, University of Manchester, UK, at the EASD conference, concludes that this is because Asians have better small fibre structure, and better skin oxygenation and blood flow because of heating.

"Diabetes mellitus is a silent killer," says Unnikrishnan. "Even if sugar levels, cholesterol and blood pressure are under control in check-ups, fluctuations in the interim period between tests may be undetected. By the time kidney failure, a heart attack or vision loss occur, they are difficult to reverse. A simple urine test for microalbuminuria can detect diabetic kidney disease early."

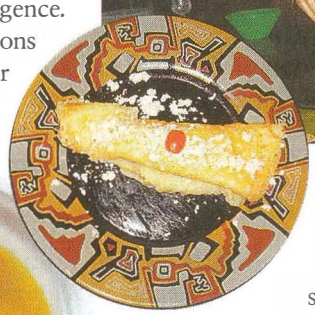
Complications may strike suddenly. For Ranu Sammadar, 55, a bus journey from her office in Kolkata's Income Tax department to her home was a matter of routine. A few months ago, Ranu, who has been a type 2 diabetic for 15 years, sat at the window of her bus. The conductor saw her slip into a slumber and decided not to disturb her to collect her fare. But the bus went past her stop. When the bus reached the final station, 10km from her home, the driver shook her. She did not wake up.

Ranu, whose husband was diabetic and died of renal failure 20 years ago, was rushed to a local clinic, which refused to treat her, as her heart was failing. Half an hour later, she was taken to a nursing home where she was put on ventilation. Doctors found her potassium and sodium levels normal, but she had severe hypoglycaemia. She

DIABETES DESSERTS

Sugar free with Chef Sunshine

BY RABI BANERJEE



TASTY TREATS: Alam's dishes include rabri with orange glaze (extreme left) and jaggery and coconut pancake

They say everything is politicised these days, and food is no exception. For Sanchayita Bhattacharjee Alam, food was not just a necessity or even indulgence. The international relations student from Jadavpur University, Kolkata, felt that ultimately, nations would confront each other for food.

The more a society grows, the more flavours its cuisine offers. Alam's stint in the theatre had given her an idea of human nature. In 2001, she opened a Mughalai restaurant in Kolkata. Then, it was purely business.

She noticed that her diabetic husband and father were missing out on several favourite sweetmeats. Now, her concerns include food for the ill.

"People may be suffering from diseases," she says. "That does not mean their taste buds have gone away. I want to help them taste their favourite dishes again." She has opened a cooking school where she teaches students to prepare food for patients with different dietary requirements.

"Diabetics are barred from sweets and fat-rich dishes, but what they get is a bland diet," she says. "The world of tasty food should not be closed to them."

Alam specialises in diabetic desserts. One of them is rabri with orange glaze. It is made with a litre of skimmed milk, crumbled bread, sugar substitute, orange peels, orange essence and agar agar. "Soak the agar agar in sugar-free orange juice for an hour," she says. "Pour milk in a non-stick pan and blend in cornflour and orange peel. Simmer till the quantity halves, add bread crumbs and cook to thicken. Mix the sugar substitute. Serve chilled."

Though sugar-free, she says, the diabetic will not tell the difference, because of the aroma from the orange peel and essence.

Jaggery and coconut pancake is another speciality for diabetics. About 15gm jaggery is dissolved in water. Flour is added and this is heated in a little oil. Add lemon and pour the batter to make a golden-brown pancake. Add artificial sweetener, grated coconut, cardamom powder and sugar-free sandesh.

Alam also makes apple cream and coconut and banana puddings, which are sugar free. "Some fructose [sugar in fruits] or fat is fine if you take enough fibre," she says. "I add adequate fibre which soaks up the sugar."

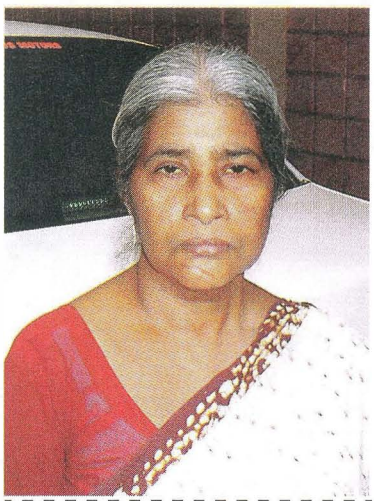
For apple cream, she soaks 20gm raisins in rum. She dissolves cornflour in skimmed milk and boils it till it thickens. The soaked raisins are mixed with the milk, apple puree, jam and cardamom powder. The mixture is cooked and served chilled.

Though the dishes are Alam's own, she received a diploma in French cooking from Le Cordon Bleu in London, where she studied two years.

Grateful diabetics gave her a nickname: Chef Sunshine. "After some time, there will be more dishes," she says. "Disease cannot bar you from tasty food."

had to stay in hospital for seven days.

"I could have died, had I been left untreated for another half an hour," says Ranu, who also has hypertension. She has also been diagnosed with diabetic retinopathy and liver and kidney trouble. She now keeps sugar in her bag to avoid such emergencies.



"I could have died, had I been left untreated for another half an hour," says Ranu Sammadar. She had severe hypoglycaemia and slipped into slumber on a bus. She now keeps sugar in her bag to avoid emergencies.

MANAGEMENT COURSE

The staple treatment for diabetes has been insulin, which is now 90 years old. It was isolated in 1921 by Sir Frederick Banting and Charles Best.

When Krishna Murthy, whose mother and five of his eight siblings are also diabetic, was first diagnosed, his sugar level was 321mg/dl. He was on metformin tablets for 10 years before moving on to insulin injections. "I give myself insulin injections in the morning and evening," he says.

Managing diabetes does not start or end with sugar control. Experts unanimously stress the need for lifestyle changes—a balanced, healthy diet, adequate exercise and quitting smoking and drinking—to control and, to an extent, prevent diabetes.

"Take a look at the typical south Indian diet," says Thomas. "People pile their plates with rice, and have a handful of veggies to go along. This ought to be reversed; pile your plates with vegetables and have a small amount of rice to go with it. It can make a huge difference."

The trick, say doctors, is to keep body weight as close to the ideal weight for your height as possible. Earlier, consuming less calories was emphasised; now, the onus is on more fibre and less fat. Fibre slows down the absorption of glucose and gives a feeling of fullness.

"A diabetic diet is a healthy diet for anyone. But about 80 per cent patients will not meet a nutritionist or dietician, although we ask them to," says Bhan. "They say, 'We know all about it'. And they tell you they have stopped rice and potatoes. There is no need to avoid them. Just avoid the unhealthy French fries and white rice. Cut down simple and refined carbs and sugars; include more complex carbohydrates."

Says Swati Bhardwaj, head, nutrition and fatty acid research, National Diabetes, Obesity and Cholesterol Foundation, and senior research officer, Diabetes Foundation (India): "For type 1 diabetes, focus is on matching food intake to insulin where one needs to know when insulin peaks and how fast the body metabolises different types of food. In type 2 diabetes, the concern may be oriented to weight loss to improve the body's ability to utilise the insulin it does produce."

Diet is the only way out for Ranu, whose overall health condition prevents her from vigorous exercise. Her late parents and siblings also having been diabetic, she relies on medicines and diet to guard her health. She takes a brisk walk every day and eats plenty of green leafy vegetables, salads and cucumber. Doctors have advised her to take adequate rest. "I have hired a cook, just so I can give priority to sleep," she says. "There is hardly anything for me to cook, as I am on a bland diet." Bhardwaj recommends completely avoiding saturated and trans fats and hydrogenated fats, fried and sugary food.

A study presented at the EASD conference by U.C. Ericson et al shows that a diet rich in protein and processed meat is associated with increased incidence of type 2 diabetes. The study, by the department of clinical sciences, Lund University, Sweden, shows that protein-rich diet has short-term benefits for weight loss and glycaemic control, but carry long-term risks.

Exercise is equally important. Bhan admits she, too, despite the fact that both her parents are diabetic, is guilty of putting off exercise. She points out the example of former Pakistan cricket captain Wasim Akram to her patients. "He was a type 1 diabetic from his teens. If he can excel in athletics at international levels, why can't we take a short walk? And, quit smoking. It worsens insulin resistance and foot problems."

GUEST COLUMN

Winning the war needs a plan

BY DR AMBRISH MITHAL

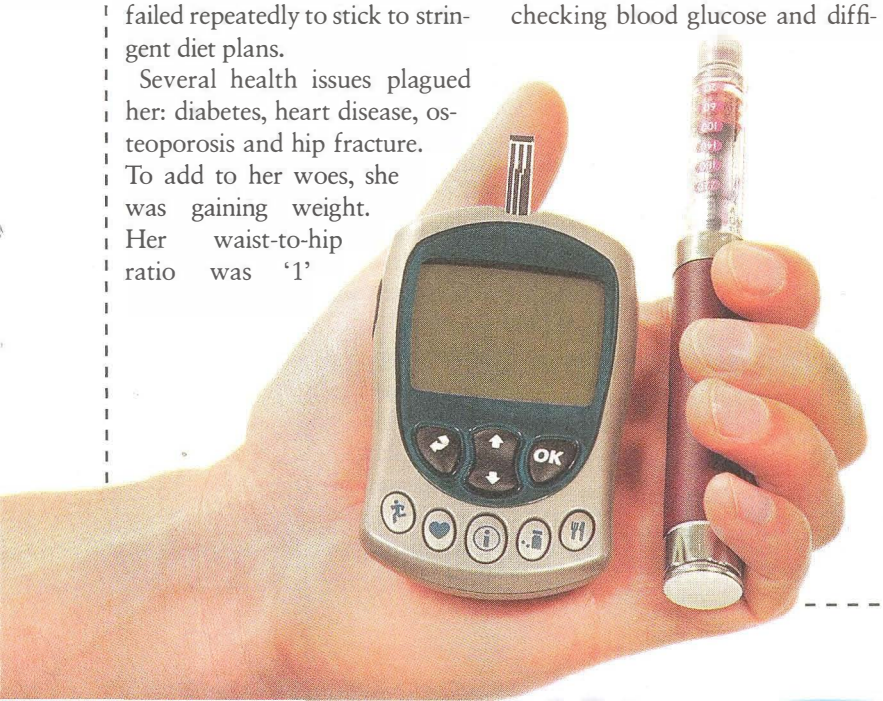
A busy homemaker, a fantastic cook and a foodie at heart, Mrs Kaul is always in high spirits. It is hard to believe that just three months ago, when she walked into my clinic, she could not stop complaining about her health problems. At 52, she had all but given up.

Now, her victory over diabetes has made her fall in love with life all over again. "After all, diabetes is a condition you 'have'; it is not what you 'are'," she says. "It can be overcome, and like anything else in life, the harder you work, the greater the success."

Originally from Jammu and Kashmir, Kaul is very fond of her state's cuisine. Although Kashmiri food provides immense pleasure to the taste buds, it is very rich in calories. So she had failed repeatedly to stick to stringent diet plans.

Several health issues plagued her: diabetes, heart disease, osteoporosis and hip fracture. To add to her woes, she was gaining weight. Her waist-to-hip ratio was '1' (normal ratio for women is below 0.8), which clearly indicated that she had excessive belly fat. Her hip fracture limited her physical activity. She was on intensive insulin therapy—injecting insulin four times a day, with other anti-diabetic pills. Despite this, her blood sugar levels were never in control—fasting sugar was always above 180mg/dl and post-meal levels were above 250mg/dl. The reason the diabetes medication was not working was that the root cause of the problem—diet and weight—were not given attention.

After her first consultation, Dr Jasjeet Wasir and diabetes educator Shubhda Bhanot met her and counselled her on behaviour modifications and made her understand the crux of her problems. Typical self-care problems in diabetes include missing medicine doses, not checking blood glucose and difficulty in sticking with a healthy diet and exercise schedule. We provided her with a realistic diabetes management plan which would not compromise her quality of life. It included regular blood glucose monitoring, a high-fibre, low-fat diet and upper body exercises.



We chose to treat her with a relatively new class of injectable drugs, incretin mimetics (in this case, liraglutide). This antidiabetic slows the rate of food emptying from the stomach, decreases appetite and results in weight loss. We had not targeted the real problem; weight loss improves blood glucose levels in type 2 diabetes.

Kaul was now motivated to take charge of her condition. I felt that half the battle was won. The diet slowly reduced her food cravings, which made it easy for her to stick to the diet plan. Her sugar levels showed drastic improvement.

Over the next three months, Kaul lost 10kg and we could take her off the multiple insulin shots. She was delighted. Her parameters were near-normal; fasting sugar hardly rose above 110mg/dl and post-meal values were below 160mg/dl. Our job was done.

Kaul confided in Shubhda that she has her favourite food now and then and manages to balance her sugar levels. I remember the statement she made during her last visit to the clinic: "You never know how bad you feel until you feel better." She can now safely undergo hip replacement surgery.

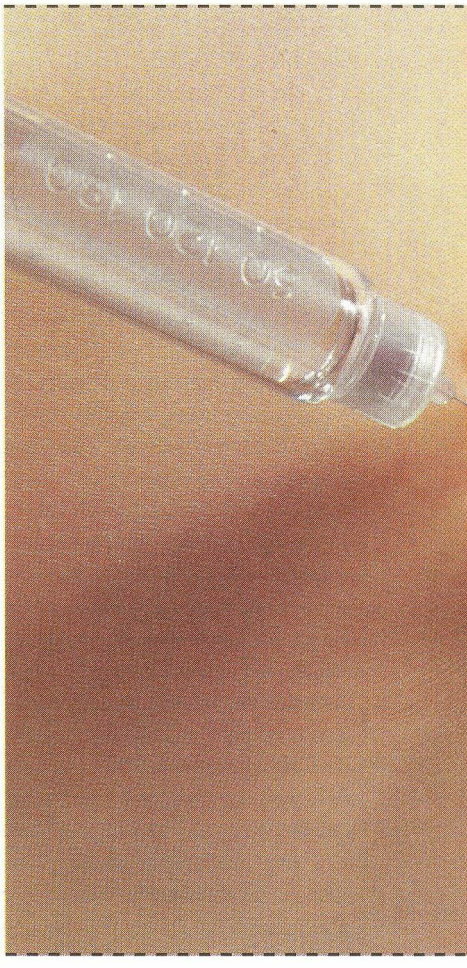
Stories such as hers make all our hard work feel worthwhile.

The writer is chairman, division of endocrinology and diabetes, Medanta-The Medicity, Gurgaon.

GUEST COLUMN

Preventive steps

BY DR RAJAMANI KARUNANITHI



Type 2 diabetes is the world's most expensive chronic disease. Adults with diabetes have heart disease death rates about four times higher than those without diabetes. Prediabetics are also at increased risk for developing cardiovascular disease.

Prediabetes is becoming more common. About 13 per cent adolescents and adults have prediabetes and they are likely to develop type 2 diabetes within 10 years, unless adequate precautions are taken. Once it manifests, type 2 diabetes may become difficult to treat. So the onus lies in early screening and prevention.

The American Diabetes Association recommends that testing for prediabetes and type 2 diabetes be considered in adults who do not have symptoms, but are overweight or obese and have one or more additional risk factors. In adults without risk factors, screening should begin at age 45.

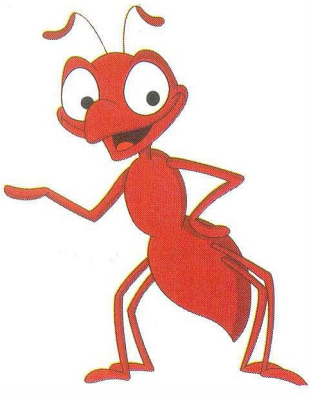
Risk factors for prediabetes and diabetes overlap considerably. The following are some risk factors, in addition to being overweight:

- Being physically inactive
- Having a parent or sibling with diabetes
- Belonging to Indian diaspora (the risk is eight times greater for

"Diabetics should do both cardiovascular exercises and strength training," says Thomas. "Aerobic exercises, which have benefits for the heart, are mandatory. One can do weights after ruling out cardiovascular risks."

There is a connection between stress and diabetes. Stress increases the levels of adrenalin and cortisol. "These hormones block insulin production and action and can lead to high blood sugar," says Unnikrishnan. "Stress can increase the heart rate and blood pressure—people with diabetes are already at high risk of heart disease and high blood pressure."

Depression and anxiety shook Vishal Sinha a year after his diagnosis—his father, also a diabetic, died. The birth of his own son made him realise that medicines alone were not enough. Now, he has replaced pizza with cereals and vegetable sandwiches, and cool drinks with tender coconut. A 45-minute brisk walk is part of his daily routine. The result: he has lost 20kg and his sugar is under control.



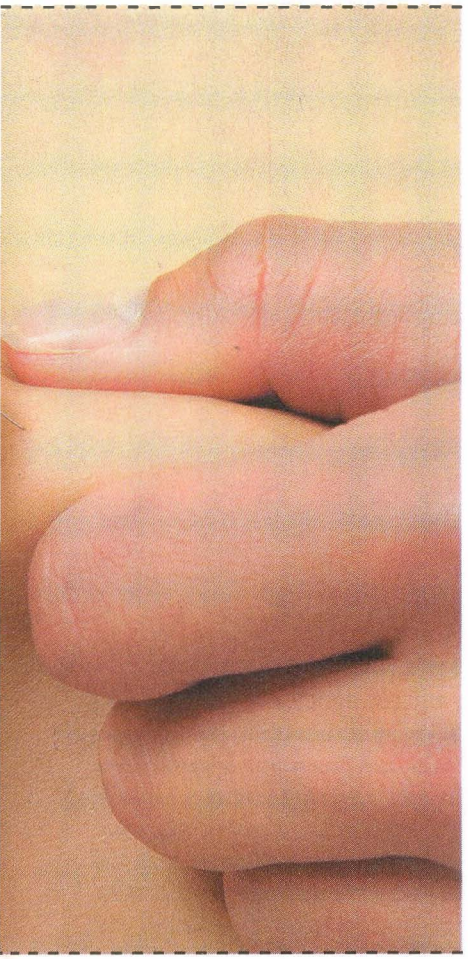
Did you know...

Synthetic human insulin was developed in 1977 by Herbert Boyer

PUMPS, PILLS AND OTHER GIZMOS

New medications, blood glucose measuring gadgets and insulin supply equipment and even once-a-week and half-yearly insulin shots (patented in Delhi and sold to the US) have made diabetes management easier.

A new class of molecules in diabetes treatment are GLP-1 (glucagon-like peptide-1) inhibitors. These help increase insulin secretion and insulin sensitivity and beta-cell mass. They also decrease glucagon secretion and delay gastric emptying, thereby lowering



Indians residing in developed countries)

- Giving birth to a baby who weighs more than 4kg, or being diagnosed with gestational diabetes
- Having high blood pressure (above 120/80mmHg) or being treated for the same
- Having HDL or good cholesterol below 35mg/dL, or triglyceride levels of above 250mg/dL

Having polycystic ovarian syndrome (PCOS)

- Having impaired fasting glucose or impaired glucose tolerance on previous blood tests
- Having other conditions associated with insulin resistance, such as severe obesity, or acanthosis nigricans (dark, velvety rash around the neck or armpits)
- Having a history of cardiovascular disease

Even if test results are normal, the tests should be repeated at least every three years. Doctors may recommend more frequent testing, depending on the results and risk factors.

The Diabetes Prevention Program, funded by the National Institutes of Health, Bethesda, indicates that millions at high risk of developing type 2 diabetes can delay it by losing weight, through regular physical activity and a diet low in fat and calories.

Weight loss and physical activity lower the risk of diabetes by improving the body's ability to use insulin and metabolise glucose.

Achieving sustained glucose control is necessary to prevent complications. Optimal control may often require multiple medications, frequent visits to the diabetic clinic, strict adherence to lifestyle prescriptions, self-management, and implementation of other recommendations.

The writer is with Jain Diabetes Center, Chennai.

glucose levels as well as obesity.

"The recent discovery of the use of incretin hormones in the control of diabetes has revolutionised treatment of diabetes," says Dr Anoop Misra. "Incretins, secreted from the intestine, stimulate pancreatic beta cells to produce insulin, especially when blood glucose levels are high, thus maintaining glucose control."

A human GLP-1 analogue, liraglutide (extracted from saliva of the gila monster, a venomous lizard native to southern America), stimulates release of insulin when blood sugar levels are high. Marketed as Victoza by Danish pharmaceutical Novo Nordisk, this is a once-daily injectable. "Liraglutide may cause gastrointestinal side-effects in about 20 per cent patients, but this dissipates later," says Alan Moses, medical director, Novo Nordisk. "Also, liraglutide cannot be overdosed and will not cause hypoglycaemia."

"An injectable molecule of the GLP-1 class, bydureon, is approved in Europe and awaiting approval in India," says Wangnoo. "This is a once-weekly shot which offers good sugar control and weight loss, with no dangers of overdose."

Another group of drugs is the gliptins, which increase the GLP-1, which inhibits glucagon release and increases insulin secretion. "These are not as powerful as GLP-1s and are used in combination with metformin and other drugs," says Thomas. A combination of sitagliptin and metformin to be used as an add on to insulin and exercise when insulin and metformin alone do not combat

Experts say Indians have more accumulated body fat, right from birth. "About 1.5 times more than the westerners," says Dr Anoop Misra. "But when it accumulates in the abdomen, it interferes with metabolism and causes problems."

DIABETES GLOSSARY

Diabetes insipidus: caused by damage to pituitary gland; characterised by frequent urination. Not related to diabetes mellitus

Diabetes mellitus: known as just "diabetes". A group of metabolic disorders characterised by high blood sugar levels. Two kinds: type 1 and type 2

Type 1 diabetes mellitus: insulin dependent; the body fails to produce insulin, usually because of destruction of beta cells in the pancreas due to an autoimmune reaction. Usually seen in young adults or children

Type 2 diabetes: non-insulin dependent. The body fails to use the insulin properly. Often accompanied by insulin deficiency. Often associated with obesity

Gestational diabetes mellitus: glucose intolerance seen during pregnancy

Insulin: secretion by beta cells in the pancreas's islets of Langerhans. Keeps glucose levels normal by helping convert excess sugar into glycogen to be stored in the liver; enables glucose absorption by cells

Glucagon: hormone that increases blood glucose levels

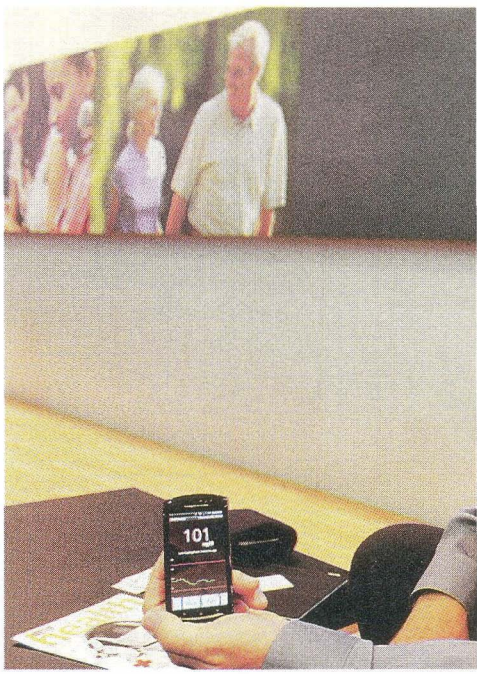
Insulin pump: provides insulin in the same pattern that mimics the body's insulin production

Bariatric surgery: weight loss surgery that has been known to reverse diabetes in short term; insulin dependency is avoided

Hypoglycaemia: very low glucose levels in the blood stream

Hyperglycaemia: excess glucose in the blood

HbA1C: glycated haemoglobin, or haemoglobin combined with glucose, which remains stable for 120 days. Now recommended as a single-point test for diabetes. The test is not influenced by variations in stress levels, diet or exercise



PAINLESS PROCEDURE: Douglas Raymond of C8 Medisensors displays his glucose count on his phone, from the HG1-c glucose monitor

insulin resistance is marketed by MSD as Janumet.

"Three gliptins," says Wangnoo, "are approved for usage in India: sitagliptin, saxagliptin and vildagliptin. The newest gliptin, linagliptin, is awaiting approval in India." Saxaglyptin has proved effective in the treatment of type 2 diabetics with kidney problems (not end-stage renal disease). This molecule is marketed by Bristol-Myers Squibb as Onglyza. Studies presented at the EASD indicate that long-term treatment of type 2 diabetes with gliptins for two years appeared to maintain improvement in HbA1C levels, adds Wangnoo. "These are relatively safe, with low potential for hypoglycaemia," he says.

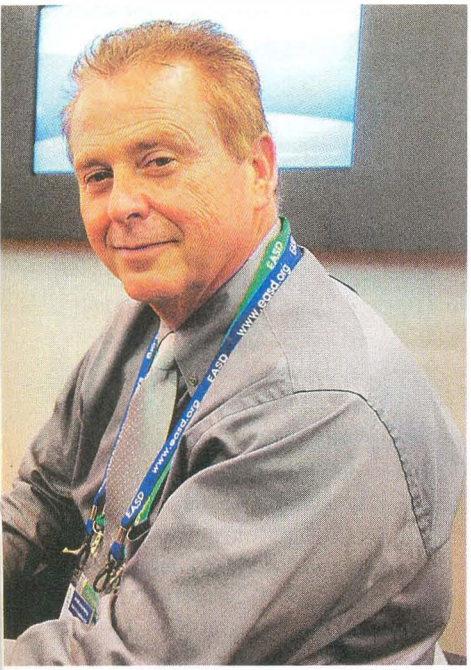
Insulin degludec is an ultra-long lasting basal insulin, currently in phase III clinical trials in 40 countries, with 10,000 patients. "Daily dosage and alternate day dosage have the same effects," says Thomas. This will greatly bring down costs. It works longer than any other, including insulin glargine—the most-prescribed insulin in the world—which has an acting period of 16 hours." Sanofi's Apidra (insulin glusine), is believed to be rapid-acting.

"The EndoBarrier is a liner that fits inside a section of the intestine," says Wangnoo. "It mimics the effects of gastric bypass, but without the surgery." A study presented at the EASD conference headed by C. de Jonge, Maastricht University Medical Centre, the Netherlands, explained that the liner rapidly improved diabetes parameters in 17 obese type 2 diabetes patients who received the liner.

Surgical intervention for obesity (bariatric surgery) has been shown to be effective in reducing insulin dependence in the case of morbidly obese diabetics. "Insulin dependence can be completely avoided in the case of gastric bypass," says Thomas. "There is weight reduction on gastric stapling, which indirectly helps manage diabetes. But the direct hormonal mechanisms in curing diabetes as such are not seen."

New generation insulin pumps, continuous glucose monitors and glucometers shaped like the iPhone made waves at the EASD conference and are making their way to Indian markets. "When I started MBBS, we had to take urine samples in test tubes, heat them and watch out for colour changes," says Bhan. The latest glucometers offer results in 3-4 seconds. There is no need for recoding by the phy-

RENU VAIDYANATHAN



sician. Thus, there is no margin for error. Insulin pumps cum meters which measure as well as control sugar are undergoing clinical trials, says Thomas.

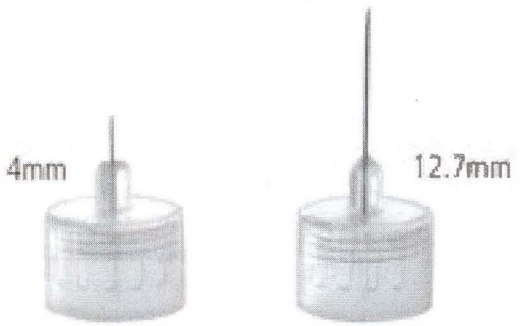
Swiss-based medical device makers Ypsomed revealed the second generation OmniPod insulin management system at the meet. This is the world's first tubing-free, smallest-sized insulin patch pump. It can hold up to 30gm insulin and comes with an integrated glucometer and cannula. "We found that about 65 per cent people in India prefer the syringe," says Sanjay Rajpal, country manager, Ypsomed. "But this is easier; the cannula insertion is automated and pain-free. The patch has to be replaced after three days." Used pods are sent to Switzerland where they are recycled.

For iPhone fans, Abbott Laboratories offers the FreeStyle Insulinx and FreeStyle Optium, both personalisable and funky glucometers. "Insulinx is a glucose meter which advices dosage, with adjustment for errors, and calculates mealtimes," says Andreana Dereniak, director, strategic marketing. "Only 41 per cent diabetics could calculate insulin dosage with adjustment for errors. This is a touchscreen device; it tells you the carbs taken since the previous reading and provides warnings in case of excess. The strips

GUEST COLUMN

Mighty pen

BY DR BENJAMIN GEORGE



Since its discovery, insulin revolutionised diabetes management. Various types of insulin are being developed for different kinds of patients. Also, the delivery system has changed. The latest method is the pen needle delivery system.

Insulin variants can be carried in a convenient pen, which delivers it through a fine needle to the subcutaneous tissue. This is a very patient-friendly system.

A recent trip to India gave me an insight into the problems of insulin-dependent diabetics. Many diabetics now use the pen needle system. A diabetic relative of mine demonstrated his pen needle to me. But I was disappointed to hear that he had two recent episodes of anterior abdominal infections (at the site of the insulin shots), which lasted for several weeks.

He had to undergo surgery to drain the infection. He was also on antibiotics, to which he later became allergic. That was when I found that he was taking the injections using the same needle—he said he had been instructed to do so. The pen needle was always on the vial, with the cap open. So bacteria could easily enter the body. I found another close friend and a physician also reusing the needle.

The needles cost about ₹7 each. So some doctors may advise patients to reuse the needle. The fact is that these needles are meant for single use only and must strictly be discarded after each use.

Before the advent of disposable needles, the syringe and needle had to be sterilised and sharpened by the patients themselves. Today's needles are manufactured for greater comfort, with electropolishing for needle smoothness. The fine-point allows for easy penetration, less friction and more glide. The plastic caps provide safety and individual wrapping provides sterility.

The smaller the needle, the less the discomfort. But larger pen needles provide large dosage to flow quickly. Body fat is an important consideration while choosing a pen needle. Children and thin, young adults may need the shortest needles.

Recent research shows that skin thickness does not vary much from person to person, irrespective of body mass index. To reach the subcutaneous tissue and avoid muscle, needles of 4mm or 5mm are comfortable for most people. People requiring larger dosages of insulin may

have a longer expiry date than most."

BayerHealthcare offers a multi-test HbA1C system, the A1CNow+, for precise measure of chronic glycaemic levels in just five minutes. This handheld device may be stored for up to four months in examination rooms.

The latest addition to LifeScan's (a division of Cilag GmbH) OneTouch series of glucometers, OneTouch VerioPro, is for those on intensive insulin therapy. The new strip technology eliminates interferences such as vitamin C and haematocrit, which affect results.

For the needle-wary, C8 Medisensors has developed the HG1-c, a non-invasive, continuous glucose monitor. "This is a belt-device that measures glucose levels in the body using a light-sensitive sensor," says Douglas Raymond, vice-president, marketing and sales. He points out a 21-year-old blonde wearing it. "Bet you can't tell she's wearing a belt-device," he says. The sensor is based on the Raman signature, proposed by Dr C.V. Raman. Light has a single wavelength and reflected energy has a unique amplitude. The device measures the reflected glucose (energy) wavelength. With a 20-hour batterly life, the battery is separate and can be replaced for $20. "This is a consumer electronic, not a health care apparatus," says Raymond. "Everyone at the EASD has been asking us when they can buy one." HG1-c will be sold online. It has an error margin of 11.5. "Not bad, normal glucometers have an error margin of 12 per cent. Besides, fingers should be clean... you can't check your sugar level after you peel a banana or something." The

need pen needles with bigger diameters.

Common injection sites include the upper arms, abdomen (not close to the navel), the fronts and sides of thighs and upper buttocks.

KEEP IN MIND:

- Perform an 'airshot' with a few units of medication before taking the actual injection
- Inject below the skin, but above the muscle
- Inject slowly, according to instructions. Keep the needle in the skin for at least six seconds after injecting
- Once the needle has entered the skin, do not change the angle of the pen—this may cause breakage or the needle may get stuck inside
- Change injection sites between shots to avoid tissue hardening
- Change the needle after each injection
- Remove the pen needle from the medicine vial immediately to prevent air from entering and prevent insulin from leaking out

Dr Benjamin George, MD, is based in New York.

device has undergone clinical trials involving more than 10,000 people over four years and is entirely made in the US. It stores 120 days of data, which can be downloaded.

After figures showed that the EU had the maximum number of deaths due to heart disease, the Portuguese Diabetes Association (APDP) and the EASD teamed up with private bread producers, PrimeBrands, five years ago, to produce a "diabetic bread". The company has been producing bread for 20 years now.

"The Portuguese eat bread with high salt content," says Pedro Vitorino, product manager. The company is moving to sell in other countries, including Spain. Some find the bread bland. There are nuts, seeds and Omega 3 oils to enhance the flavours. The company's next project is bread for coeliacs, and looking for importers in India.

Children with diabetes are at risk of developing eye and renal troubles by their 20s. But they can do as well as anyone else, with control and monitoring.

Diabetes care is not just about medicines and gizmos. For those with foot ulceration, US-based Dr Comfort manufactures premium footwear from dress shoes, bathroom slippers and heels to formals and sports shoes. "About 80 per cent amputations can be avoided with the right footwear. Since most diabetic shoes are ugly, people opt for less-comfortable shoes, which causes foot ulceration," says Craig Truscott, Dr Comfort. "There should be minimum pressure on the foot, and the pressure should be distributed. Our shoes offer depth for the toe box and are stretchable." The company also offers heat-moulded custom inserts to make the diabetics' feet more comfy.

FUTURE PERFECT?

"The first step we must take now is to prevent diabetes," says Prof. Eduardo Montanya, director, Laboratory of Experimental Endocrinology and Diabetes at the Medical School of the University of Barcelona. "One promising avenue is stem cell research." Insulin is secreted by the mature beta cells of the islets of Langerhans in the pancreas. "It is interesting to study the progenitors of these cells—the ductal cells—in their embryonic stage," he says. "We need to explore the ductal cells' potential to regenerate. A Brazil-based study has shown some success, but more groundwork needs to be done before we celebrate."

Also, say experts, the glucocentric treatment, aimed at controlling blood sugar levels, has given way to treatment aimed at improving general health. "Because obesity is increasingly manifesting in younger people, it is practical to aim at tackling obesity instead of waiting for people to become diabetic," says Atkin. "For instance,

INTERVIEW/Dr V. Mohan, founder, Madras Diabetes Research Foundation

India should be worried

BY S. NEERAJ KRISHNA

Dr V. Mohan is national coordinator and principal investigator of the ICMR-INDIAB study on diabetes. Phase I covered Tamil Nadu, Maharashtra, Jharkhand and Chandigarh. Excerpts from an interview:

What was the most startling finding in your study?

The prevalence of diabetes in rural India, especially in Tamil Nadu and Maharashtra. Even in Jharkhand, the prevalence is increasing.

Could this be because of the difference in the method of surveys?

No. The lifestyle, the diet... everything used to be different. Those days [70s], it used to be two per cent urban and one per cent rural prevalence. Today, it is 12-15 per cent in urban areas and 3-8 per cent in rural areas.

CHEENU PHOTOS

Is it an alarming situation?

In rural Kerala, diabetes prevalence is higher than in urban Kerala. This is a reverse trend, similar to the west. The rest of India, too, is catching up.

Why such a trend?

If you look at the US, Germany or Japan, this is the case. People in developed regions are aware, they hit the gym and control their diet. The prevalence of diabetes is a good index of other non-communicable diseases, too.

Are we facing a crisis?

Who is going to treat the poor in rural India? We call it the three 'As': accessibility, availability, affordability. We cannot leave the people in a 'no doctor, no drugs' situation. Action from policy makers, doctors and NGOs should start right away.

Your study identifies a big group of prediabetics.

Yes, and India should be worried as our conversion rate from prediabetes to diabetes is high; in the west the annual conversion rate is 5 per cent, here it is 10 per cent.

Your tips....

45 minutes of walking a day. Go for a healthy diet. Bad diet, lack of exercise, smoking, excessive drinking... these are villains. Diabetes affects one's sexual health, too. Beware.

China has a lot of obese people, and diabetics. But the pharmaceutical companies would rather aim at treatment than focus on funding research aimed at prevention or even a cure."

Awareness, which helps early diagnosis, proper management and prevention or delay of complications, is also increasing. Diabetes educators play a part in this. Vishal Sinha was referred to Manju Panda, diabetes educator at Max Healthcare, Delhi, by a doctor. The educators make patients understand the disease and how their body reacts. They also advise lifestyle and diet changes.

Panda helped Sinha design a diabetic-friendly schedule—regular exercise, small meals with complex carbs and more fibre, sound sleep and regular monitoring of blood glucose. She also changed Sinha's attitude. "Earlier, I was self-conscious while revealing I was diabetic," he says. "Now I know it is in my genes and anyone with a faulty lifestyle can get it. She made it simpler for me to accept it."

The IDF's biggest concern now is getting its 200-odd affiliate member countries to realise the scale of the problem. "We are trying to make governments realise that the healthy choice is the default choice," says Guariguata. "The Caribbean countries, especially Guyana, have been very cooperative in tackling diabetes so far, followed by India and Brazil. But we do face resistance from the US and the EU, one of the reasons being funding. But we hope to make them realise that the returns are higher."

The future, believes Bhan, holds a cure. "We have come up to once-a week insulin shots, antibody therapy, immunotherapy and even pancreatic transplants, which haven't worked, because of immunosuppresants," she says. "But till a cure can be found, keep yourself healthy and in control of your sugar levels."

with Jisha Krishnan, Mini P. Thomas, Rabi Banerjee and Gunjan Sharma

ASKEXPERT: DIABETES

Dr. Joe George
MD, DNB, DM
Endocrinologist and Diabetologist

Vinaya Rao: My 12 year old son was diagnosed with type 1 diabetes last year. He is on 2 doses of insulin. He is a responsible child and takes care of his eating and exercises to some extent, but he sometimes cannot manage his sugar level – it sometimes goes very high and sometimes very low. Now he wants to join cricket academy, should I allow him?

In my view, you should definitely allow him and support him to join sports of his choice. Blood glucose control is usually better when people with diabetes exercise in a structured manner. There are sports people with type 1 diabetes who have reached the top in their sport. It is also true that achieving goals and maintaining health and safety require a solid understanding of diet, insulin therapy, and exercise. Please discuss his schedule and activity with his doctor. For preventing very low and high blood sugars please do consider few things-

- It would be better if your son's regimen is changed from 2 doses of premixed insulin to (3+1) 4 doses of modern insulin. When a person with diabetes is on 3+1 regimen i.e. 3 doses of short acting and 1 dose of long acting insulin it leads to better control of blood sugar with more flexibility and a lower chance for hypoglycemia. Rapid-acting insulin analogs can be administered at mealtimes or even after food, instead of 30 to 45 minutes before taking food, and limit the chance of error and can be adjusted according to the quantity of food and exercise which may vary some times. Adjusting insulin dose depending on the length and intensity of exercise and control of blood glucose level is key. This is a subject you must discuss in detail with your childs physician and follow his or her guidance.
- Check blood sugar before, during and after exercise. Exercising with high blood glucose levels, when there is less insulin in body can disrupt normal metabolic control and will elevate glucose levels further and also lead to formation of ketone bodies. Starting with a low blood glucose level should also be avoided. The increased insulin sensitivity caused by exercise can last for several hours after exercise. This can raise the risk of hypoglycemia for up to 48 hours after exercise is completed. The heightened risk of hypoglycemia after exercise leads to the need for diligent blood glucose monitoring after exercise sessions at least for the first few days.
- Discuss the diet plan with your doctor or diabetes educator, so that child gets good nourishment and ensure adequate liquid/ plain water for good hydration.
- It is also essential that yours sons coach and friends know about diabetes so that they can help him during any episode of low blood sugar levels.

Baldev S: I am 36. My weight is 102 KG. I just got diagnosed with diabetes 4 months ago. I am also on treatment for male infertility. My doctor wants me to lose weight. My friend told about an injection which is good for both diabetes and obesity. Does that really help?

If a person with type 2 diabetes is overweight, weight loss is commonly recommended. By losing weight, people with type 2 diabetes can become less insulin resistant, and they are able to use insulin better. Nothing can rule out the importance of a healthy meal plan and physical activity to reach a healthy weight. So, please meet a dietician or diabetes educator to have your personalized diet and exercise plan. I think your friend is talking about Glp-1 therapy. For, people who have type 2 Diabetes and are obese, GLP-1 based therapy – which is a new class of treatment offers good prospects. GLP-1 is known to stimulate insulin release when sugar levels are high - after eating a meal. In addition, GLP-1 also produces a feeling of fullness that often leads to significant weight loss. GLP-1, with its ability to lower blood glucose, systolic blood pressure, lipid levels and body weight without inducing low blood sugar makes it a good choice for people with type 2 diabetes to control diabetes, reduce weight and other complications.

This drug is available in India but remember that no medicine can be taken without doctor's prescription. Check your HbA_{1c} and visit the specialist for appropriate medication. Also remember, no medication can substitute the role of healthy diet and regular exercise.

Mymuna S: I am 54 year old woman with diabetes since September 2010. One of my friends told me that diabetes affect every organ of the body. Can I do something to prevent this?

Diabetes results in many symptoms and complications, and all of them are related to constant uncontrolled high blood glucose levels. It is true that diabetes, if not controlled properly, can lead to increased risk of developing serious long-term complications of diabetes like heart disease, stroke, kidney failure, blindness, amputations and other conditions related to poor blood circulation. But, it is equally true that one can control diabetes and live a very healthy and normal life.The key to living with diabetes is to understand how diabetes affects the body. Since extremely high or low blood glucose levels are hard on body, it is important to try to keep blood glucose levels as even as possible to avoid long-term complications. Diet, exercise, medicine and monitoring are the four essential components for keeping an even balance of glucose and insulin in the blood at all times.

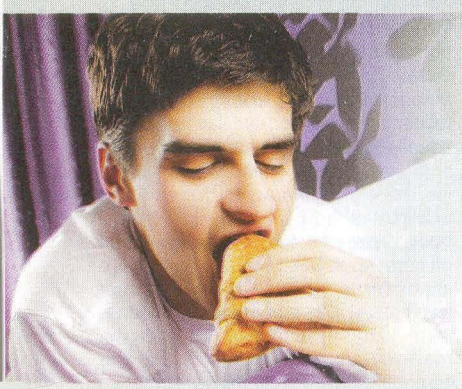
Monitoring sugar levels regularly help in controlling diabetes in an optimal way. Blood sugar checks can help your doctor and you see how food, exercise and insulin or medicine affects your sugar level. Check your blood sugar as often as your doctor suggests. Along with self monitoring of blood glucose level, HbA_{1c} (glycosylated hemoglobin) test is a blood test which one must do every 3 month. The HbA_{1c} level show how well blood sugar has been controlled during the previous 2 to 3 months. In people with Diabetes HbA_{1c} is aimed at less than 7 percent. The higher the HbA_{1c}, the greater is risk for developing complications. At the time of diagnosis if HbA_{1c} >9%, or at any time in spite of 2 or 3 OAD, S HbA_{1c} >7.5 insulin may be prescribed. Inspect your feet daily .Get your blood pressure checked regularly. Once in a year, have Lipid Profile, Urine Microalbuminurea, Serum Creatinine, Eye fundus examination and Foot Examination by the doctor to prevent complications of diabetes. You can surely win over diabetes.

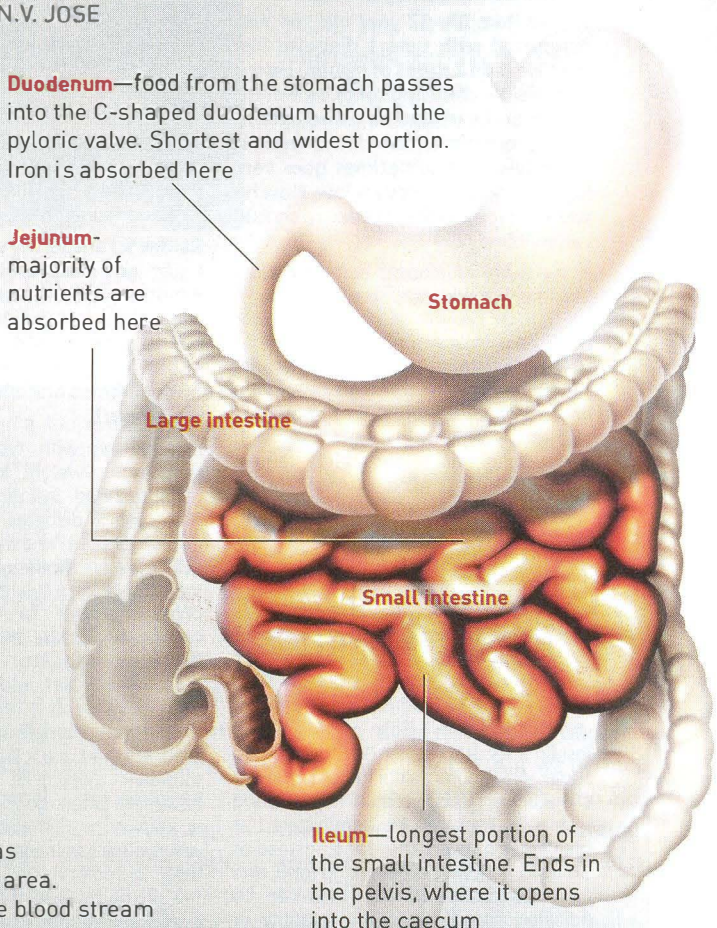
BODYSCAPE

Tube dynamics

Our largest internal organ is about three times the height of the average human. The small intestine—which makes up 70 per cent length and 90 per cent surface area of the digestive system—is about 20 feet long, and has a diameter of about an inch and a half. Within this highly convoluted tube between the stomach and the large intestine, 90 per cent digestion and absorption of food takes place.

TEXT BY RENU VAIDYANATHAN & GRAPHICS BY N.V. JOSE





Function

The main job of the small intestine is the absorption of minerals and nutrients. When food from the stomach enters, the hormone cholecystokinin is secreted by the small intestine. It stimulates secretion of pancreatic enzymes. The hormone secretin causes bicarbonates to be released, to neutralise the acidity of the food.

The food is broken into particles; proteins are broken down into amino acids, fats into fatty acids and glycerol and some carbohydrates into simpler sugars.

Churning movements diffuse the particles through blood vessels. The inner wall (mucosa) has protrusions called villi, to increase the absorption area.

The absorbed food is then transported through the blood stream while undigested food moves to the large intestine.

Tube troubles

Obstruction—blockage that impairs the passage of food. May be caused by twisting (especially in infants), cancer, surgery, ulcer or gallstones

Coeliac disease—an inherited autoimmune disorder where gluten (wheat protein) causes changes in the small intestine. This leads to malabsorption and "wasting"

Cancer—non-cancerous tumours are common and can be removed. For cancerous growths, the prognosis is often poor

Diverticulitis—inflammation of the diverticuli (sacs in the intestines)

Crohn's disease—chronic inflammation in any part of the digestive tract; an autoimmune disorder

Did you know...

In men, the average length of the small intestine is 22 feet six inches, while in women, it is 23 feet four inches

In one lifetime, the digestive system handles about 50 tonnes of food and liquid

Food stays in the small intestine for up to four hours In one day, 1.9 litres of food and liquid pass through the body

The duodenum is named thus because it is equivalent in length to the breadth of 12 fingers

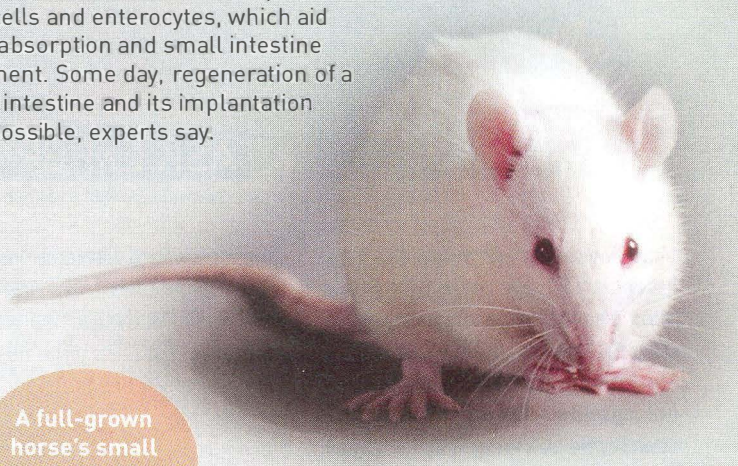
A full-grown horse's small intestine is about 90 feet long

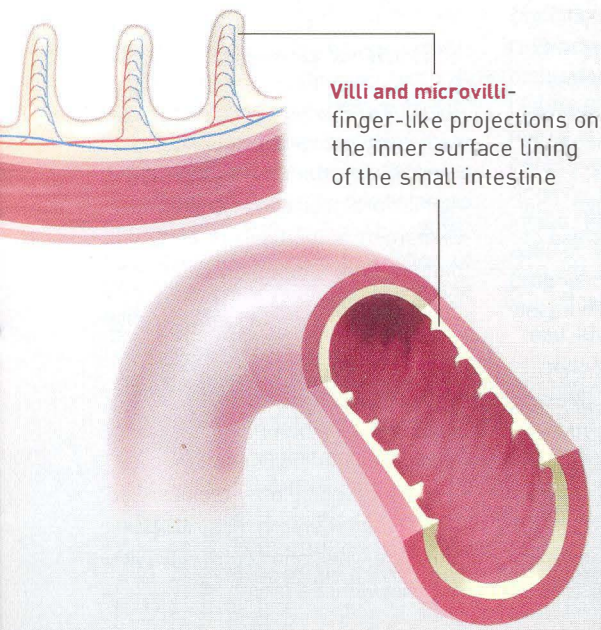
Undigested leftovers that leave the body are one-fourths the size of the ingested food

Even if you eat upside down, intestinal muscles will hold the food

Fake tube

Researchers at the Children's Hospital in Los Angeles have generated a tissue-engineered small intestine in a mouse model. They first extracted organoid units (clusters of lining and connective tissue of the small intestine) from the young mice. These were frozen for eight weeks before being implanted in adult mice. Two weeks after implantation, the mice had developed smooth muscle cells and enterocytes, which aid nutrient absorption and small intestine development. Some day, regeneration of a patient's intestine and its implantation may be possible, experts say.





Villi and microvilli- finger-like projections on the inner surface lining of the small intestine

Inside out

In September 2009, Babli Devi gave birth to a girl in Patna. The baby's small intestine was outside the abdomen, covered with thin membranes.

Gastroschisis is a congential anomaly where babies are born with part or the whole of the intestine outside the abdomen, through a small opening in the abdominal muscles. One in 5,000 babies may be born with the condition. Use of recreational drugs and tobacco by the mother in early pregnancy may be risk factors. The condition can be corrected surgically.

Missing tube

Devin McQueen was born in Washington, D.C., with almost no small intestine. His biological parents being drug abusers, he was adopted by a nurse and her husband when he was 13 months old. Intravenous feeding kept him alive, but he was at risk of liver damage. Finally, at age five, doctors performed a transplant. The procedure, which has a survival rate of 50 per cent, took eight hours and a new small intestine was sewn in. He then developed pancreatic infection.

A week later, he ate for the first time in his life—toast and oatmeal. Devin is still on immunosuppresants to prevent rejection, but eats normally now.

Q&a

MEETA LALL
Nutrition expert, New Delhi
Log in to www.the-week.com and click on ASK EXPERT to post your queries online.

ASK EXPERT: NUTRITION

Mahadevan: **I am 69 years old, my height is 5'8", and my weight 84 kilos. I have been exercising regularly till I injured a knee recently. My doctor says that though I have not injured my bones or tissue, I seem to be suffering from arthritis. The pain now prevents me from exercising regularly, including walking. I fear I may put on weight. Can you please suggest ways to prevent this anticipated problem? How should I change my meal pattern? I am a vegetarian.**

Osteoarthritis is the commonest form of arthritis which affects the weight-bearing joints in the legs and back. The diet recommended for arthritis is more or less similar to that for good health in general. The points to keep in mind are: eat a well-balanced diet. You need to eat food from all groups—cereals, pulses, milk, green leafy vegetables, other vegetables, fruits and fats—every day. Follow the half plate rule: half of your plate should be filled with starchy foods (chapatis, rice, breads, pasta, potatoes) and protein foods (milk/curd/cheese and fish/chicken/eggs/pulses). The other half should be fruits and veggies cooked in minimum oil.

Fortunately, the traditional Indian diet (minus the excessive fat/oil) matches the recommended diet for arthritis. Eat plenty of fruits and vegetables. Try to eat at least five portions of fruit or vegetables a day. Choose fruits and vegetables of different colours, especially the brightly coloured ones as these tend to be rich in vitamins and antioxidants. Maintain a healthy body weight, since being overweight puts an extra burden on weight-bearing joints (back, hips, knees, ankles and feet) when they are already damaged or under strain due to arthritis. Even a small weight loss can make a big difference to your joints. Instead of following crash or fad diets, the only way to lose weight permanently is to develop healthy eating habits: use very little oil for cooking; choose healthier methods such as boiling, grilling, roasting and steaming.

Use only skimmed milk and milk products. Avoid organ meats and pork totally. Banish all fried food, processed and fast food. Mithai and desserts are calorie-rich; indulge only once in a while (once a week). Cut down on sugar totally. Alcohol, especially beer, adds on calories. Limit yourself to two small drinks twice a week. Keep healthy snacks handy: low-calorie yoghurt, fresh fruit, unsweetened wholegrain biscuits, roasted chanas or tofu/paneer.

Try to start walking. Perhaps you could consult a yoga expert who could guide you on specific exercises which will ease arthritis. Increase your activity levels within and outside the house. Eat plenty of calcium and iron-rich food. The richest sources of calcium are milk, cheese and yoghurt and certain fish which are eaten with bones. Being out in the sun for even half an hour a day is great. Sunlight produces vitamin D in our skin which helps our body to absorb and use up calcium from food. Pulses, dark green leafy vegetables are good sources of iron. Cinnamon, a great source of manganese, fibre, iron and calcium, has been proved to lower LDL (or the bad) cholesterol and regulate blood sugar. In a study at Copenhagen University, patients given half a teaspoon of cinnamon powder combined with one tablespoon of honey every morning before breakfast had significant relief from arthritis pain after one week and could walk without pain within a month. ●

FOCUS

Act on Diabetes Now! Diabetes Day 2011

What is Diabetes?

By Dr Arpandev Bhattacharyya

Diabetes has affected mankind for hundreds of years; it is a chronic metabolic disorder with high levels of sugar in the blood. The word "Diabetes" means siphon and "Mellitus" stands for sweet. Excess sugar in the blood is excreted in urine, making it sweet (mellitus) along with a lot of water (siphon)—thus the name!

A gland in the tummy named pancreas secretes a hormone called Insulin, which controls blood sugar. When we eat, glucose is absorbed from the stomach and enters the blood. The glucose must enter the cells to make energy and insulin helps glucose to enter the cells. Diabetes is the result of inability of the pancreas to produce normal amount Insulin or Insulin becoming ineffective to do its' job; more commonly both.

DIABETES—Why bother?

Diabetes is a colossal worldwide health problem and can cause serious health complications. Over 170 million people have Diabetes worldwide and this is predicted to increase to 300 million by 2025. India has the dubious distinction of Diabetes capital of the world. People with diabetes are:

- 25 times more likely to develop blindness
- 15 times more likely to develop kidney disease
- 30 times more likely to undergo amputation
- 6 times more likely to develop myocardial infarction
- 4 times more likely to suffer a stroke

than people with Diabetes.

Diabetes: Why me?

Frequently this question is asked, despite no family history how did I get Diabetes. Family history certainly is an important factor, but the fact is being Asians, we all have high-risk gene for Diabetes. Remember it is not your fault that you have Diabetes. You are just happened to be the person who got it. In India 6-8 per cent of villagers and up to 16 per cent of city dwellers has Diabetes. Recent studies showed that the incidence of Diabetes is increasing all over the world and it is more so in Asians. Also, we are getting Diabetes at an earlier age than people in the west.

Who are at risk of Diabetes?

Family history of Diabetes is the major risk factor. If you have a family history and your blood sugar is normal, it is advisable to check for Diabetes every year. Sedentary life-style, obesity, smoking, excessive alcohol intake, high blood pressure, and, in case of women, previous Diabetes in pregnancy or delivering big baby (birth weight more than 4Kg) are risk factors for Diabetes.

What are the types of Diabetes?

There are two main types: type 1 or young onset and type 2 or adult onset Diabetes. In type 1 Diabetes, pancreas does not produce Insulin and you cannot survive without Insulin. In type 2 Diabetes (more than 90 per cent of cases of Diabetes are type 2), pancreas does produce Insulin but it is insufficient and/or less effective. Diabetes can manifest for the first time in pregnancy, called gestational Diabetes.

What should I do when I am told, "you have Diabetes"?

First step when you see your blood sugar is high is to recheck to confirm the diagnosis. The next and most important, although most difficult, step is to accept the diagnosis. Do not try to run away from the diagnosis; try to know the facts about Diabetes.

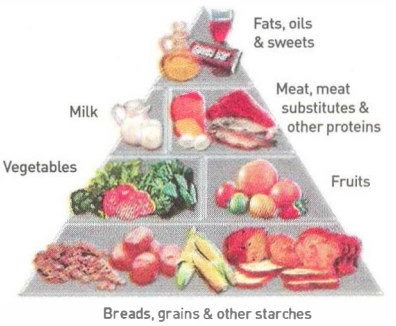
The good news is that with proper care you can avoid or at least postpone the deadly complications of Diabetes. The bad news is that Diabetes is not going to go away. At present, the word "cure" is not there for Diabetes. Also it is worth knowing that Diabetes worsens over time, this is not your fault, and this is the nature of Diabetes. So, it is best to control Diabetes from the beginning. The Mantra is Control your Diabetes; do not allow Diabetes to control you.

Dr Bhattacharyya is HOD, Dept of Diabetes and Endocrinology at Manipal Hospital in Bangalore.
Phone: 25024444/25023404

Act on Diabetes: ABC

A	Advice – Diet, Exercise, Testing, No smoking
B	BP less than 130/80
C	Cholesterol less than 160 mg per cent
D	Diabetes control HbA1C around 7 per cent
E	Eye check once in a year
F	Feet check once a year
G	Guardian medicines: Aspirin, ACE inhibitors.

Diabetes Food Pyramid



Pursuit of ha

BY HANNAH BOOTH

I am sitting across a table from my sister-in-law, outside a small Italian restaurant, reading her a letter. As experiences go, it's toe-curling. I am telling her everything I'm grateful to her for. It's like a bad episode of Oprah.

But according to Action for Happiness, little things like this can really improve our lives. The movement, founded by London School of Economics professor Richard Layard and Dr Anthony Seldon, aims to create positive social change in the UK. The movement's core idea is that we should all try to create more happiness. Or, to paraphrase the Dalai Lama, happiness doesn't just happen to you, you have to work at it. To this end, a list has been drawn up of 50 activities, from getting to know neighbours to unplugging from technology, that can make positive changes to our lives. But can they work? I spent a week finding out.

Being kind

According to the organisation, doing kind things for others strengthens our connection with them and builds trust—particularly with strangers—leading to happier communities. The acts can be large or small, but must be beyond the things you do regularly.

This is not hard. To my surprise, I am not overly kind. I'm polite, I'm friendly, I hold

ppiness

The path to inner joy is simple—commit random acts of kindness, relax and be thankful for what you've got

open doors, but my natural reserve prevents me from, say, mowing a neighbour's lawn.

So I step it up, offering to let someone queue-jump (he refuses), and trying to help a pair of lost tourists ("*Nein danke*, we're fine"). Finally—yes!—a couple struggles off a bus with a wheelchair and bag of shopping. I take a bag, give the woman my arm, and walk her to the wheelchair. I feel like Mother Teresa.

Give thanks

Next I must write down, every night, three things I'm grateful for. This, apparently, helps us feel happier, healthier and more fulfilled—and less materialistic.

It turns out that I am a natural, scribbling down teenage things such as "amazing swim!", "gorgeous day!", "James McAvoy!". After a particularly bad day it makes me feel instantly more upbeat.

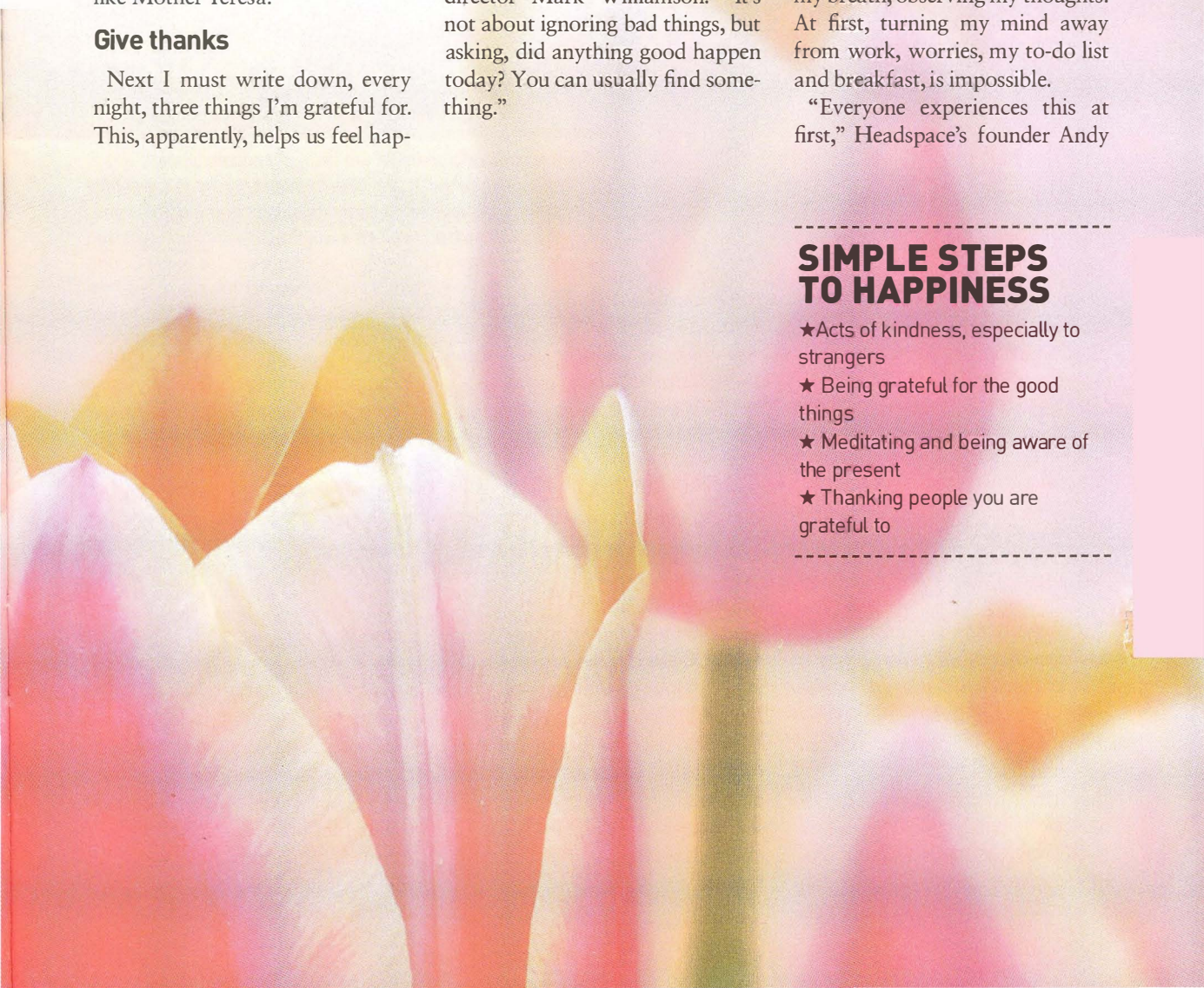
"This action helps us to reframe our perceptions of how our day is going," says Action for Happiness's director Mark Williamson. "It's not about ignoring bad things, but asking, did anything good happen today? You can usually find something."

Being mindful

Meanwhile, I am trying to meditate. Boy, this is hard. I chose it for its supposed power to transform, through teaching us mindfulness—living in the present rather than dwelling on the past or worrying about the future—which in turn can make you more robust.

The meditation web site, Headspace, instructs me to sit for 10 minutes each morning, focusing on my breath, observing my thoughts. At first, turning my mind away from work, worries, my to-do list and breakfast, is impossible.

"Everyone experiences this at first," Headspace's founder Andy



SIMPLE STEPS TO HAPPINESS

★Acts of kindness, especially to strangers
★ Being grateful for the good things
★ Meditating and being aware of the present
★ Thanking people you are grateful to

Puddicombe reassures me. "People think you have to somehow switch off, but actually meditation is more about switching on, developing awareness. So don't let a wandering mind put you off."

And, sure enough, as the week progresses, I start to look forward to it. It gives me a calm but ready-for-anything feeling that's rather novel. I even try it when swimming. With a bit of extra effort, entire lengths go by unnoticed, and afterwards I feel not just physically exercised, but more clear-headed.

Write a letter

Another suggestion is that you should thank the people you're grateful to, and that the best way to do this is by writing a letter, then reading it to them.

My letter-reading day is looming. I've chosen my sister-in-law for several reasons but mainly because, although life is easier if you get on with your in-laws, there's no compunction to like, let alone love, them. But I do—she is like a sister, and I've never told her that.

According to Williamson, this will make us both happier, and has a knock-on effect—if we know others have valued something we've done, we are more likely to do it again. In fact, all happiness can be contagious. Research from the US suggests it can affect not just us, but our friends, their friends and even their friends.

Reading the letter makes me cringe. I do it quickly and perfunctorily. My sister-in-law stares into her lap so she doesn't meet my eye. I'd put a few weak jokes in there to diffuse the awkwardness. But afterwards she looks like she might cry. She tells me she is deeply touched, had no idea how much she means to me, and feels the same.

Better still, the rest of the night is spent discussing previously taboo subjects: a long-forgotten bust-up; how neither of us is exactly how we appear; what my mom says about me behind my back.

It's refreshing to air feelings in a positive context, rather than after a fight, and I come away not only understanding her better but glowing with something indefinable—the sensation, perhaps, that I've done something really nice. ●

HAPPY NATIONS

- UN General Assembly adopted a resolution on happiness in July 2011
- It said the 'pursuit of happiness' is a fundamental human goal
- Happiness is critical to advancing economic growth and social progress, says the resolution
- Bhutan uses the Gross National Happiness to measure national progress
- UK plans to include results from its happiness survey in policy formation

Danger looms large

Breast cancer is the most common cancer affecting women in urban India and the incidence is steadily increasing in the rural population, too

By Dr Nalini Rao

According to statistics, we know that breast cancer will affect one in eight women during their lifetime. This is a disease which most commonly affects women over 50 years, but it can affect younger women and men also. The most common symptoms which alert patients, are a lump in the breast, discharge from the nipples, changes in the skin over the breast or breast pain; often there are no symptoms. 5-10 per cent of these tumours can show a hereditary pattern—the large majority occurs in a non-hereditary setting. Causes of breast cancer beyond our control include, increasing age, female gender, race, parity, heredity and our menstrual history. However, there are significant risk factors that we can and should control like maintaining an optimal body weight, exercising for at least 30 minutes thrice a week, consuming a fat restricted diet, avoiding tobacco and unnecessary exogenous estrogen, taking alcohol in moderation and leading as stress free a life as possible.

What is NEW in breast cancer?

There have been major advances in all aspects of breast cancer management.

The screening and early diagnosis of breast cancer has been possible with the help of high resolution digital mammography and MRI scans in high risk young women. Breast cancer is breast cancer—this is not true anymore. We now know that breast cancers are a heterogeneous group of tumours which cannot be clubbed together and given a standard treatment. There has been an explosion in our understanding of the pathology, i.e. microscopic characteristics and molecular oncology, i.e. genetic patterns of these tumours. These features are what make each breast cancer, each secondary and each recurrent tumour different and unique. Identifying these critical 'signatures' helps us in delivering treatment that is individualised and tailored to that particular patient.

Along with being able to diagnose tumours early and better characterise them we have a huge menu of newer and more effective drugs to treat with. Many of the newer drugs are 'targeted' which means they have much fewer side effects. High-end radiation therapy machines can deliver more precise treatments that produce almost no normal tissue damage. There has been a revolution in the surgical management of these patients; mastectomies are rarely done. Breast conserving surgeries along with reconstructive techniques which enhance body image are the norm. While cure is the ultimate goal, quality of life remains at the forefront of all treatment choices.

This is the care every woman with breast cancer deserves and should get. Unfortunately, every patient may not be aware of the options or have access to them. There is robust evidence to show that a patient's chance of cure is enhanced if she receives treatment in a dedicated breast cancer clinic with the necessary infrastructure and expertise. It is our responsibility to ensure that patients get this expertise.

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FOCUS

Dedicated to diabetes care

Research on newer treatments is a priority for the globally acclaimed MV Hospital for Diabetes and Diabetes Research Centre, which offers training, too

BY SWATI AMAR

World Diabetes Day, November 14, is a milestone in the lives of over 300 million people living with diabetes. "Prevalence of diabetes in India is high compared to even countries like the UK or the US. In urban cities it is about 15 per cent, while in the UK it is about 8-10 per cent. Indians abroad have a higher prevalence of diabetes than their local counterparts because of higher genetic susceptibility. In addition, a higher degree of insulin resistance due to abdominal obesity is quite common among Indians," says Dr Vijay Viswanathan, Managing Director, MV Hospital for Diabetes and Prof. M. Viswanathan Diabetes Research Centre, Royapuram, Chennai, "Recent studies at the Prof. M. Viswanathan Diabetes Research Centre show a shift towards younger age groups acquiring type 2 diabetes compared to our studies in the 1990s."

According to Dr Vijay, a recent study published in the Journal of International Diabetes Federation from the Prof MVDRC shows that the direct and indirect cost of diabetes care, assuming that there are 50 million people with diabetes in India, is about $30 billion. "A matter of grave concern is that people from the lower socio economic background are selling off their personal assets and are borrowing heavily to pay for their diabetes treatment while the people in the higher socio economic bracket are using up their personal savings to pay for diabetes care. Insurance is available only to less than 5 per cent of the patients," he says.

DR VIJAY VISWANATHAN, MANAGING DIRECTOR, MV HOSPITAL FOR DIABETES

Another study by the centre has found a higher prevalence of obesity in Chennai with an overall prevalence of 18 per cent. Among children from higher socio economic schools, the prevalence of obesity is 26 per cent. "A holistic approach directed towards a healthy lifestyle by a team of doctors, dieticians and parents is the best way to prevent obesity and diabetes among youngsters," says Dr B.S. Sanjay, a diabetologist at MV Centre for Diabetes, Bangalore.

Established by late Prof. M. Viswanathan, doyen of diabetology in India, in 1954 as a general hospital, MV Hospital for Diabetes, Royapuram, Chennai, became a hospital dedicated to diabetes care in 1971. Under Prof. M. Viswanathan's professional and administrative leadership, the hospital has grown to achieve the status of an institution of international excellence. Equipped with sophisticated technology, state-of-the-art diagnostic laboratory, facilities for major emergency and elective surgery and world-class treatment and care for diabetes, the hospital along with the Diabetes Research Centre undertakes research and imparts postgraduate training to doctors in diabetology. Today, this 100-bedded hospital has grown to be one of the largest referral centres for diabetes with more than 2,50,000 patients registered. The MV Centre for Diabetic Footcare, Podiatry, Research and Management at Royapuram, Chennai, offers services comparable to any diabetic foot clinic in the west. Their yoga centre has experience in controlling diabetes

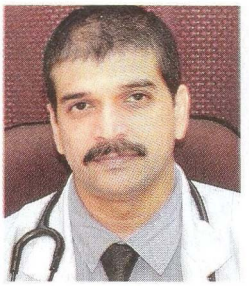
DR VISHNUPRIYA REDDY

DR B.S. SANJAY

DR H. MITALEE

through yoga and they also have an ayurvedic massage centre.

"It is important to control diabetes to prevent complications like retinopathy (eye problem), nephropathy (kidney problem), neuropathy (nerve problem), heart diseases, circulation problem of feet (PVD) and sexual problems (erectile dysfunction)," says Dr Uma Mahesh, senior diabetologist at MV Hospital for Diabetes, Chennai. He advises meticulous foot care and oral hygiene as well as regular dental check-up.



DR UMA MAHESH

DR HEMANGA BARMAN

Dr Vishnupriya Reddy of MV Centre for Diabetes, Bangalore, has a message for diabetic women: "Women contemplating pregnancy need to be seen by a multidisciplinary team for better management of diabetes before and during pregnancy."

Dr H. Mitalee, diabetologist, MV Hospital for Diabetes, Chennai, stresses the need for monitoring glucose levels in the blood and urine: "Self-monitoring of blood glucose (SMBG) is an important component of modern-day therapy for diabetes. SMBG helps a diabetic identify both low and high sugars, develop an individualised blood glucose profile and make appropriate choices in diet and physical activity. Urine glucose monitoring is also effective. Another device, the continuous glucose monitoring system (CGMS), assesses glycemic levels continuously, checking adequacy of treatment regimens and studying the glycemic indices of various food stuffs."

According to Dr Hemanga Barman, diabetologist, MV Hospital for Diabetes, Chennai, pharmacological interventions are an essential component of diabetes management. Oral hypoglycemic agent (OHA) therapy is the usual mode adopted, especially for type 2 diabetics. Global research has led to the introduction of many new molecules for diabetes management, offering several options to the doctors and patients. Insulin therapy is most effective in lowering blood glucose levels and is the only mode of treatment for type 1 diabetes. Combination therapy with OHA and insulin therapy brings forth good results in some cases.

Established in 1972, the Diabetes Research Centre Foundation, Chennai, is recognised as a research institute for undertaking advanced research in diabetes by the Indian Council of Medical Research. The Department of Science & Technology (DST), Government of India, recognised it as a research institute in 1983. The centre has been in the forefront of clinical and basic research in diabetes in this country.

MV Hospital for Diabetes and Diabetes Research Centre has been designated by the World Health Organisation as a WHO Collaborating Centre for Research, Education and Training in Diabetes.

The MV Hospital for Diabetes has started a programme called 'Chennai Slim and Fit Programme'. Launched three years ago, the first phase involved educating teachers and students of over 100 CBSE schools in Chennai on the imperative need for adopting healthy lifestyles. The focus of Phase 3, which is underway, is diabetes prevention among IT companies in OMR, Chennai.

The MV Hospital for Diabetes is working on a project to use stem cells for the treatment of diabetes. During the past two years, the hospital has successfully used similar technology to treat diabetic foot ulcers and has prevented amputation of the legs in some patients. Dedicated centres such as the MV Hospital give us the confidence that the menace of diabetes can be curbed effectively and maybe a lasting solution is not far away! ●

The hospital has been awarded ISO 9001: 2008 Certification by British Standards Institution, UK and is NABL accredited. They have their corporate office and branches at the following places:

MV Hospital for Diabetes (P) Ltd
& Prof. M.Viswanathan Diabetes Research Centre
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Ph: 044-25954913/14/15

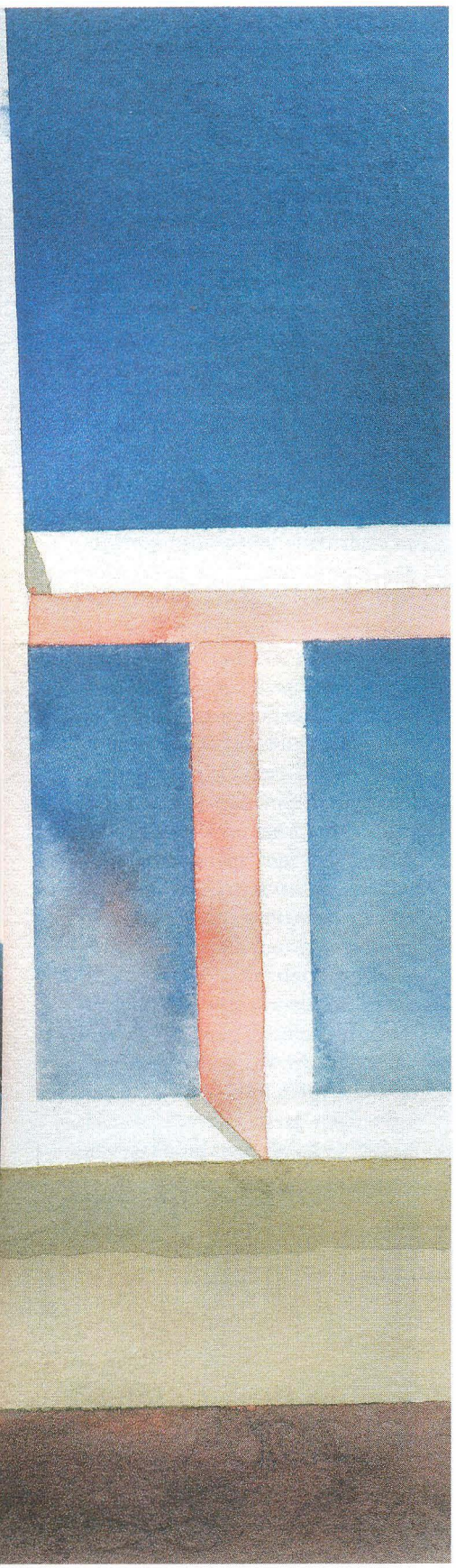
MV Centre for Diabetes
No.51, Second Floor, R.K.Mutt Road,
Mylapore, Chennai – 600004
Ph:044 – 24613716 / 42102117

MV Centre for Diabetes
No. 113, Old Mahabalipuram Road, (Above South India Bank),
Perungudi, Chennai - 600098.
Tel : 044 - 24962633, 43132528

MV Centre for Diabetes
570/571, First Floor, III Block,
Sarjarpura Road,
Koramangala, Bangalore-560034
Ph : 080 – 41513333 / 41468686

MV Centre for Diabetes
No.855/A 10th Main Road,
5th A Cross BSK I Stage,
2nd Block, Srinivasa Nagar
Banashankari, Bangalore - 560 050
Phone : 080 – 26678818

ILLUSTRATIONS: BHASKARAN



BY DR RANJANA SRIVASTAVA
An oncologist, commentator and author of Tell Me the Truth-Conversations with My Patients about Life and Death, she lives and works in Melbourne, Australia.
www.ranjanasrivastava.com

Better ways of telling the truth

Some time ago, I saw a lady in her seventies whom I will call Mrs Jones. After a diagnosis of advanced lung cancer, she had a prolonged recovery from thoracic surgery to remove fluid from her lungs. Her breathing improved and despite initial concerns, she made it out of hospital. I met her when she came in to discuss chemotherapy, which she was keen to try despite the many mentioned side effects. She told me that she wasn't interested in dying yet and would do everything to beat her cancer. The first cycle of chemotherapy did not affect her too badly and she felt buoyed. The second cycle landed her in hospital. Again, she surprised us by getting out of hospital but spent the next two weeks in bed, feeling weak and washed out.

But her original intent, to beat the cancer, remained strong, and when it came time for the third cycle of chemotherapy, she decided not to tell anyone about just how bad she had been feeling. She feared that no one would entertain giving her more chemotherapy, if they found out the truth. So she went on to have a third cycle of treatment, which destroyed her body's meagre reserve. This time she was hospitalised looking moribund. For three days she was delirious, looking a sorry shell of her former self. Resuscitated with antibiotics and fluids, she improved.

But the scans showed that her cancer had grown. In my estimation, she had only a few weeks to live. Doctors are notorious for not getting the prognosis right, but she did look very ill. As I sat by her bedside on the first day she could talk coherently, imagine my surprise when she asked me what chemotherapy I planned to give her next. My reaction then was to be puzzled as to how the patient could be so obtuse. My next thought was to firmly stamp out the idea of further chemotherapy from her mind, pointing to her recent near-death experience. But it seemed odd that a reasonable and intelligent woman would behave like this. So I decided to find out a little more. "Mrs Jones, what do you think more chemotherapy would achieve?"

"Why, of course, I have a life to live," she responded, looking curiously at me.

"Do you hope chemotherapy might help you live longer then?"

"Won't it? Isn't that why anyone has treatment?"

This is the oncologist's dilemma—how to tell the truth without extinguishing hope. How to tell Mrs Jones that her lifespan was limited, that further chemotherapy would be futile, or even hasten death, and that her remaining days would be much better spent cherishing life than fighting off toxicities? How to shine a light on frankly unrealistic expectations without coming across as uncaring?

Patients like her abound in practice. Many are shocked when confronted by the news that there is no other active treatment for their illness. Many become angry, many others depressed. Family members accuse the oncologist of giving up. "Once you said there was no other treatment, Dad just gave up and died," a tearful daughter says. "Whatever you do, I don't want you to tell her that things are looking bad," a grief-stricken husband implores.

Faced with such intense emotions and heart-felt pleas, sometimes it seems easier to write up another round of treatment than have a sombre discussion about life and death. It is my experience that the vast majority of patients recognise it themselves when they are seriously or incurably ill. Patients are not fools—they notice their weight falling off, the headaches getting worse, the fatigue proving insurmountable.

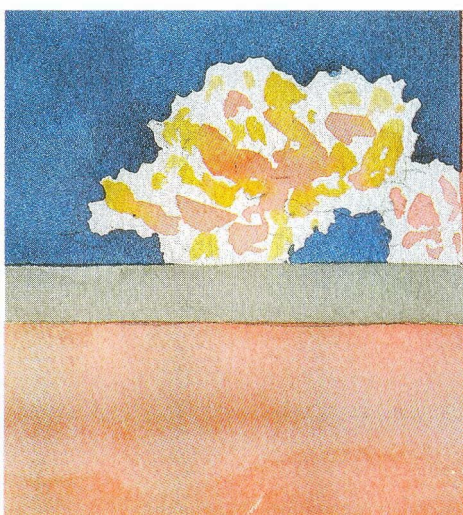
The term 'denial' is commonly used in relation to patients who pretend to be better than they are, but what I see is that many factors determine the readiness of a patient to accept or voice publicly what he or she senses privately. These factors may have to do with culture, religion, a sense of responsibility or a deeply held personal philosophy about how one ought to conduct oneself towards the end of life. But regardless of the circumstances, I have yet to come across a patient who does not appreciate compassion, empathy and honesty from a doctor during a difficult phase of life. You might ask what honesty means. For Mrs Jones, does honesty mean telling her bluntly that chemotherapy is a waste of time, or that she should open her eyes to her poor prognosis? Or does honesty mean having a conversation with her family instead, to tell them what she doesn't want to hear? You might recoil at the thought, but plenty of patients find themselves on the receiving end of blunt facts that terrify them and their loved ones. It causes them to lose what little hope they had and long after the patient is gone, leaves relatives with a lingering sense of despondency over whether things could have been done better. My feeling is that faced with the plain facts, the feisty Mrs Jones would explode with anger although privately, she would be crushed.

So I think that honesty must be tempered by that other vital quality in medicine, empathy. Empathy is the art of putting yourself into another person's shoes, to imagine what it must be like for the patient to be going through the experience. Empathy is difficult, although not impossible, to cultivate and when time is short and queues of patients long, it gets even harder. But what Mrs Jones and patients like her need in place of chemotherapy is empathy. They need their doctor to say, "I can see how eager you are to keep fighting your cancer. Let's talk about how I can really help."

Patients want the truth from their oncologist. Some want the whole truth while some are satisfied with part of the truth. One of my patients likes counting the exact number of spots in the liver, another wants the facts in broad brushstrokes. One wants to understand what a 10 per cent survival rate means, another just whether he will be around for Christmas. If I had thought in my younger days that there was only one kind of truth, what I see clearly now is that even truth comes in different shades. Part of the obligation of a doctor then, is to build an understanding of a patient so that the truth can be tailored to the individual. This does not mean bending the truth or lying, but also not feeling compelled to make a reluctant patient an expert on their diagnosis and prognosis. At the same time, for a certain patient, it is right to discuss the latest newspaper article or journal publication about his disease. My view is that by keeping open a good line of communication, and being seen as approachable, things generally seem to work out.

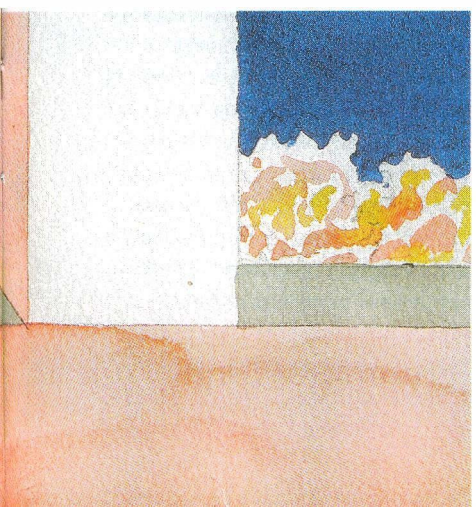
So what happened to Mrs Jones, you wonder. One day she asked her ever present family to step outside and allow her some privacy. She told me then that her sole aim in life now was to see her first grandchild get married in six months' time. "But I am beginning to think that's not going to happen."

Her grandson had told me that he would do anything to have his favourite grandparent present at his wedding, but didn't see a



way to broach an earlier wedding with her, without implying that he thought she was dying. It soon became clear that not only Mrs Jones, but her entire family, quietly realised the seriousness of her disease. Sensing that Mrs Jones had arrived at a point where she was willing to discuss the inevitability of her decline, I took the opportunity to praise her for her courage thus far, while saying that the next part of her journey would require deeper courage and conviction. She asked me what I would advise. I had no hesitation in telling her then, that from everything I knew about her, she should not have further chemotherapy, but think about what the most meaningful way of spending the rest of her days might be.

Was it a sad conversation? Yes, in part. But a necessary one, and one that I feel no oncologist can shy away from. It was also an empowering conversation for the patient who now felt able to make a decision in her best interest. After a frank family meeting, Mrs Jones went home to preside proudly over her grandson's wedding which was brought forward. Her final wish fulfilled, she gave clear instructions to her family which meant that the next time she fell ill, which was less than a month later, she received no heroic measures but was allowed to die peacefully. Her family was filled with relief and gratitude for the way things ended. The last time I spoke with them they were pleased that she had recovered some quality of life in her last days.



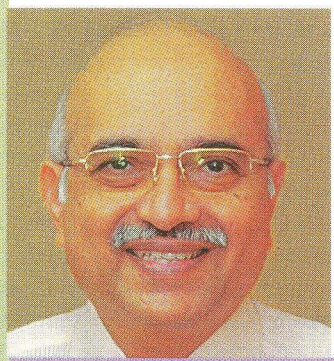
There is a common feeling that respectfulness, empathy and compassion are skills that one is born with. Many medical faculties in the west implicitly support this by having introduced a variety of measures in the last decade that seek to qualify how well a prospective doctor can communicate. Observations at the interview may include explaining a technical concept to a layperson or a broad assessment of the general sincerity or likeability of a candidate. Each year I am involved in such interviews and it really is a privilege to meet dozens and dozens of bright and motivated young people talk about changing the world by becoming a doctor. As a parent, I am amazed by some of these youngsters, while at other times, I can't help feeling sorry for someone's child who is clearly dedicated, but on the day just couldn't talk the talk that would get him or her over the line.

But that's my point—in undergraduate schools at least, aspirants to medicine are children. They are 17 or 18, with limited life experience, attending what could be the interview that changes their whole life. When I was interviewed at age 17, I thought of myself as having the substance to become a decent doctor. It took me the next ten years to realise that my description had taken little account of the personal growth, insight and broad perspective that it requires to be a good doctor—I now realise that I am still a work in progress.

In an extraordinarily competitive field, I can acknowledge the importance of assessing communication skills as a selection criterion as long as we never become complacent about the vital importance of further equipping medical students and doctors with the tools to communicate well with the patients they serve. There is evidence to suggest that good interpersonal skills can be taught, and honed much in the same way as doctors learn to do procedures like resuscitation and insertion of IVs. In fact, medical students and doctors are keen for this type of education, for they recognise that their job satisfaction is derived from patient satisfaction. The best medical schools and hospitals around the world are recognising this brief, propelled by the voice of communities that are demanding it. Health care systems are also recognising just how important good communication is in curbing complaints, reducing legal action, and improving patient experience of care.

Finding ways of telling the truth and explaining sophisticated tests, treatments and decisions are all going to become crucial in the coming years as modern medicine crosses once unimaginable frontiers. And a crucial measure of a health care system will be how well it can demystify medicine and communicate with patients. I don't consider myself an expert or the only voice on telling the truth in medicine. I make mistakes, too, and hope that I learn from them. I know extraordinarily skilled professionals aside from doctors who handle difficult situations, tragedies and give bad news routinely while retaining the admiration and loyalty of patients and their families. Different patients need different ways of communication and different professionals invent ways they can best meet these needs. But what I do see as a common thread between all these people is that they regard the practice of medicine as more than a job; they regard it their vocation. And if your vocation is to first do no harm, you will always look for better ways of telling the truth. ●

Q&a



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ASK EXPERT: SEXOLOGY

Avinash: My profession puts me under a lot of stress. I had had a very satisfactory sex life until about 10 years ago, when I noticed I was no longer experiencing pleasure at the time of ejaculation during intercourse. I ignored it thinking it to be temporary but it has persisted. I started having severe erection problems about five years ago. I am unable to have proper erection sufficient for penetration even after a lot of foreplay. I was referred for a serum testosterone test and the reading was 4.45 ng/ml. Please advise.

It appears that you are experiencing a condition known as 'sexual boredom'. In any long-standing monogamous relationship where the partners do not have varied foreplay techniques, this is bound to happen. Your stressful career may also be an add-on culprit. Your worry about not getting pleasure itself may rob you of your sex drive and erectile ability. If you are a smoker, consume alcohol and lead a sedentary life, they can adversely affect your sexual health. There may be other causes, too. These can be evaluated only by using appropriate diagnostic tools. I suggest that you consult a specialist in sexual medicine.

Ravi: Can pregnancy be avoided by having sex during or after menstruation? I do not want to use a condom.

What you are referring to is known as 'safe period' method of family planning. It is also known as 'rhythm method' or 'natural birth control'. It is based on the understanding of the woman's natural monthly cycle. The couple has sex during the least fertile days of the month. This means intercourse should be avoided around the time of ovulation, which is when an egg is released from the ovary. Generally, ovulation occurs around the 14th day of a normal, regular and 28-day menstrual cycle. The greatest likelihood of getting pregnant lies centred during this time. Since the exact date of ovulation cannot be prejudged, one week prior to and after the 14th day is to be avoided. The main drawback of this method is to factually establish the time and date of ovulation. Additionally, many women may not have a perfect 28-day cycle which tilts the balances and calculations.

VT: I used to masturbate rubbing my penis against the surface of bed while lying down. Post marriage, I experienced pain on the tip of my penis and found that it lost hardness quite soon during intercourse. I am also unable to discharge within the vagina. However, there is discharge if I am rubbing it with my underwear in place and over my wife. I took ayurvedic capsules for around four weeks. I also moved the skin at the tip of my penis back and forth with coconut oil. The pain at the tip of penis has reduced. Please guide me.

Your masturbatory method is the cause of your sexual problem. You have conditioned yourself to a par-

ticular method of sexual stimulation. You are used to the feel of a piece of cloth which you will not experience during vaginal intercourse. Also your pelvic movements during masturbation may be side to side while in vaginal intercourse it has to be to and fro. Since you are not used to this you may not be able to sustain your erection. Regarding your pain in the penis tip you need to be physically examined by a doctor.

Prabhakar: **I am 44 and happily married. My blood pressure increased in the last one year but is now under control. I have also been taking regular medication for my sugar levels for nearly a year. Apart from a half-hour morning walk, I do not have much exercise. Will medication affect my sexual desire? My spouse is 40 and sexually active. I am unable to prolong sex and tire more easily now. I do not want to use any stimulants. Has age also affected my sexual drive?**

Diabetes can result in a condition known as 'diabetic testes' in which the testicular function is adversely affected. This may reduce the testosterone (male hormone) production, which in turn can slow down the sex drive. It can also produce erectile difficulties.

Apart from this, the ageing process, in general, can slow down the pace of sexual response (but does not kill it altogether). In any long-standing monogamous relationship, as yours, the couple experiences a condition known as 'sexual boredom or monotony'.

Due to this the frequency of sex may come down and the partners may not be turned on easily by each other. This condition can be managed by varying the foreplay techniques and by taking vacations together. However, the precise causes for your problem have to be identified. For this you need to consult a specialist in sexual medicine. The tiredness mentioned by you may be due to your health disorders.

What men want...

And would like women to know

Men are accused of being clumsy lovers. The reality is that women do not know how to treat men. Women hardly know what men want. A few strong themes emerged from the responses in a US-based survey to a question, "In your experience what is it about men's sexuality that women do not understand?" The men shared these broad responses and frustrations.

Men's responses:

We get turned on by visual stimulation

She needs to be stroked to get turned on. What she doesn't understand is that "I have already been stroked by her figure and I do not want to indulge in sweet nothings". We want the lights on to see them but they want to hide under the sheets.

Sex is physical

Men get into bed to hump whereas women get into bed for romance. "I want to watch Basic Instinct to get into the mood but she wants to read Mills and Boon." Why can't women separate sex and love?

We fool around and then fall in love

We are told we are penis-centric. Women do not understand that the penis is attached to the heart. Regardless of the physical nature of our sex drive, sooner or later our hearts get entangled. Men are just as sentimental as women are. "We just need someone to help us out of our shell."

We need feedback during sex

We are not inconsiderate lovers. We are just a confused lot.

-We need instructions. We are not mind readers.

-When we ask them, the women are too shy or unable to specify.

-They allow us to do what we want and then complain they are not getting what they want.

We want women on top

Men want women to play a more active role in bed. Men like to be seduced. A great male fantasy is women taking charge.

We want women to understand us

-We, too, like to be touched and caressed. We, too, want to feel wanted. Women think that the way to a man's heart is through the stomach, but it may be better to adore and chase.

-Women are clumsy lovers, too. If they want us to understand them they should understand us.

-Men and women are alike except for a couple of minor plumbing differences.

Ladies! Are your listening?

YogaMadeEasy

By DR S.N. OMKAR
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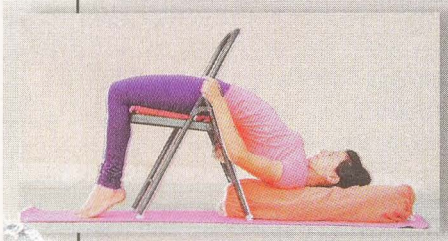
BEND FOR THE BEST

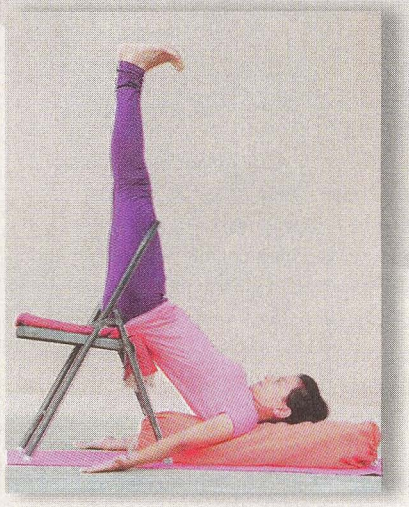
Here is a simple inverted posture to keep the thyroid gland healthy. Inverted postures are also useful for easing blood flow from the lower extremities (legs).

PHOTOS: BHANU PRAKASH CHANDRA;
MODEL: MANASA UPADHYA



1. Keep a blanket on a chair without the back rest.
2. Keep a bolster pillow on the floor behind the chair.
3. Sit straight at the edge of the chair.
4. Bend backwards and gently slide down through the gap in the chair.
5. Hold the chair and bend back.
6. Rest the back of the head and neck on the bolster pillow, the chin touching the chest.
7. Slowly raise both legs up.
8. Keep both legs straight—stretch the heels, pull the knee caps and tighten the thigh muscles.
9. Relax the arms on the floor.
10. Stay with slow and steady breathing for 3-5 minutes.
11. Flex the legs, slowly slide down and relax.

Note: Please ensure that the chair is steady to avoid falling.



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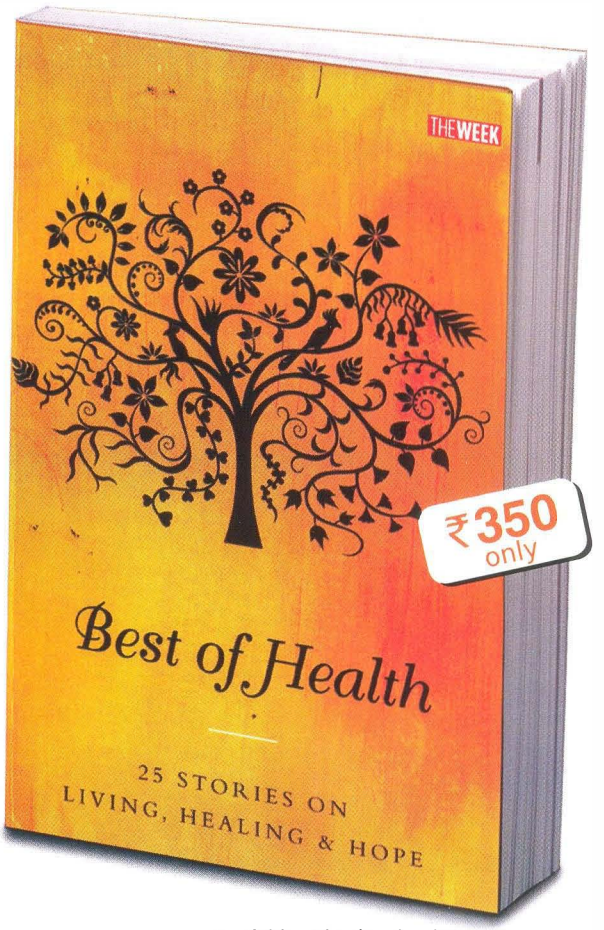

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